# Di250

# SERVICE MANUAL

## [GENERAL]

# Safety Precautions for Inspection and Service

When performing inspection and service procedures, observe the following precautions to prevent accidents and ensure utmost safety.

* Depending on the model, some of the precautions given in the following do not apply.

Different markings are used to denote specific meanings as detailed below.

**WARNING** — Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION** — Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

The following graphic symbols are used to give instructions that need to be observed.

Used to call the service technician's attention to what is graphically represented inside the marking (including a warning).

Used to prohibit the service technician's from doing what is graphically represented inside the marking.

Used to instruct the service technician's to do what is graphically represented inside the marking.

## WARNING

1. Always observe precautions.
   - Parts requiring special attention in this product will include a label containing the mark shown on the left plus precautionary notes. Be sure to observe the precautions.
   - Be sure to observe the "Safety Information" given in the Operator's Manual.

2. Before starting the procedures, be sure to unplug the power cord.
   - This product contains a high-voltage unit and a circuit with a large current capacity that may cause an electric shock or burn.
   - The product also contains parts that can jerk suddenly and cause injury.
   - If this product uses a laser, laser beam leakage may cause eye damage or blindness.

3. Use the specified parts.
   - For replacement parts, always use the genuine parts specified in the manufacturer's parts manual. Installing a wrong or unauthorized part could cause dielectric breakdown, overload, or undermine safety devices resulting in possible electric shock or fire.
   - Replace a blown electrical fuse or thermal fuse with its corresponding genuine part specified in the manufacturer's parts manual. Installing a fuse of a different make or rating could lead to a possible fire. If a thermal fuse blows frequently, the temperature control system may have a problem and action must be taken to eliminate the cause of the problem.

4. Handle the power cord with care and never use a multiple outlet.

- Do not break, crush or otherwise damage the power cord. Placing a heavy object on the power cord, or pulling or bending it may damage it, resulting in a possible fire or electric shock.
- Do not use a multiple outlet to which any other appliance or machine is connected.
- Be sure the power outlet meets or exceeds the specified capacity.

5. Be careful with the high-voltage parts.

- A part marked with the symbol shown on the left carries a high voltage. Touching it could result in an electric shock or burn. Be sure to unplug the power cord before servicing this part or the parts near it.

6. Do not work with wet hands.

- Do not unplug or plug in the power cord, or perform any kind of service or inspection with wet hands. Doing so could result in an electric shock.

7. Do not touch a high-temperature part.

- A part marked with the symbol shown on the left and other parts such as the exposure lamp and fusing roller can be very hot while the machine is energized. Touching them may result in a burn.
- Wait until these parts have cooled down before replacing them or any surrounding parts.

8. Maintain a grounded connection at all times. (This item may not apply in the USA.)

- Be sure to connect the ground wire to the ground terminal even when performing an inspection or repair. Without proper grounding, electrical leakage could result in an electric shock or fire.
- Never connect the ground wire to a gas pipe, water pipe, telephone ground wire, or a lightning conductor.

9. Do not remodel the product.

- Modifying this product in a manner not authorized by the manufacturer may result in a fire or electric shock. If this product uses a laser, laser beam leakage may cause eye damage or blindness.

10. Restore all parts and harnesses to their original positions.

- To promote safety and prevent product damage, make sure the harnesses are returned to their original positions and properly secured in their clamps and saddles in order to avoid hot parts, high-voltage parts, sharp edges, or being crushed.
- To promote safety, make sure that all tubing and other insulating materials are returned to their original positions. Make sure that floating components mounted on the circuit boards are at their correct distance and position off the boards.

## CAUTION

1. Precautions for Service Jobs

- A toothed washer and spring washer, if used originally, must be reinstalled. Omitting them may result in contact failure which could cause an electric shock or fire.
- When reassembling parts, make sure that the correct screws (size, type) are used in the correct places. Using the wrong screw could lead to stripped threads, poorly secured parts, poor insulating or grounding, and result in a malfunction, electric shock or injury.

- Take great care to avoid personal injury from possible burrs and sharp edges on the parts, frames and chassis of the product.
- When moving the product or removing an option, use care not to injure your back or allow your hands to be caught in mechanisms.

2. Precautions for Servicing with Covers and Parts Removed

- Wherever feasible, keep all parts and covers mounted when energizing the product.
- If energizing the product with a cover removed is absolutely unavoidable, do not touch any exposed live parts and use care not to allow your clothing to be caught in the moving parts. Never leave a product in this condition unattended.
- Never place disassembled parts or a container of liquid on the product. Parts falling into, or the liquid spilling inside, the mechanism could result in an electric shock or fire.

- Never use a flammable spray near the product. This could result in a fire.
- Make sure the power cord is unplugged before removing or installing circuit boards or plugging in or unplugging connectors.
- Always use the interlock switch actuating jig to actuate an interlock switch when a cover is opened or removed. The use of folded paper or some other object may damage the interlock switch mechanism, possibly resulting in an electric shock, injury or blindness.

3. Precautions for the Working Environment

- The product must be placed on a flat, level surface that is stable and secure.
- Never place this product or its parts on an unsteady or tilting workbench when servicing.
- Provide good ventilation at regular intervals if a service job must be done in a confined space for a long period of time.
- Avoid dusty locations and places exposed to oil or steam.
- Avoid working positions that may block the ventilation ports of the product.

4. Precautions for Handling Batteries

- Replace a rundown battery with the same type as specified in the manufacturer's parts manual.
- Before installing a new battery, make sure of the correct polarity of the installation or the battery could burst.
- Dispose of used batteries according to the local regulations. Never dispose of them at the user's premises or attempt to try to discharge one.

5. Precautions for the Laser Beam (Only for Products Employing a Laser)

- Removing the cover marked with the following caution label could lead to possible exposure to the laser beam, resulting in eye damage or blindness. Be sure to unplug the power cord before removing this cover.
- If removing this cover while the power is ON is unavoidable, be sure to wear protective laser goggles that meet specifications.
- Make sure that no one enters the room when the machine is in this condition.
- When handling the laser unit, observe the "Precautions for Handling Laser Equipment."

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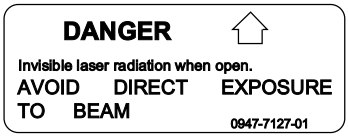
注意- ここを開くと不可視レーザ光が出ます。ビームを直接見たり、触れたりしないでください。
CAUTION- INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
VORSICHT- UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
ADVARSEL- USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEN
ADVARSEL- USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
VARNING- OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD STRÅLEN ÄR FARLIG
注意： 当您打开这里时，会出现肉眼看不见的激光射线，请不要直视或接触光线。

1167P001AA

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## Other Precautions

- To reassemble the product, reverse the order of disassembly unless otherwise specified.
- While the product is energized, do not unplug or plug connectors into the circuit boards or harnesses.
- The magnet roller generates a strong magnetic field. Do not bring it near a watch, floppy disk, magnetic card, or CRT tube.
- An air gun and vacuum cleaner generates a strong electrostatic charge that can destroy the ATDC sensor and other sensors. Before cleaning a component with one of these devices, be sure to remove all the sensors. Otherwise, use a blower brush and cloth when cleaning parts.
- When handling circuit boards with MOS ICs, observe the "INSTRUCTIONS FOR HANDLING THE PWBs WITH MOS ICs" (applicable only to the products using MOS ICs).
- The PC Drum is a very delicate component. Observe the precautions given in "HANDLING OF THE PC DRUM" because mishandling may result in serious image problems.
- Note that replacement of a circuit board may call for readjustments or resetting of particular items, or software installation.
- After completing a service job, perform a safety check. Make sure that all parts, wiring and screws are returned to their original positions.
- Check the area surrounding the service site for any signs of damage, wear or need of repair.
- Do not pull out the toner hopper while the toner bottle is turning. This could result in a damaged hopper motor or locking mechanism.
- If the product is to be run with the front door open, make sure that the toner hopper is in the locked position.

## Used Batteries Precautions

ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Germany

VORSICHT!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

France

ATTENTION

Ily a danger d'explosion s'ily a remplacement incorrec de la batterie.
Remplacer uniquement avec une batterie du meme type ou d'un type équivalent recommande par le constructueur.
Mettre au rebut les batteries usageés conformément aux instructions du fabricant.

Denmark

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Norway

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

Sweden

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

Finland

VAROITUS

Paristo voi räjähtää, los se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden mukaisesti.

# Di250

# GENERAL

MINOLTA

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# 1 SAFETY INFORMATION

## Laser Safety

This is a digital machine which prints by means of a laser. There is no possibility of danger from the laser, provided the machine is operated according to the instructions in this manual.

Since radiation emitted by the laser is completely confined within protective housing, the laser beam cannot escape from the machine during any phase of user operation.

This machine is certified as a Class 1 product. This means the machine does not produce hazardous laser radiation.

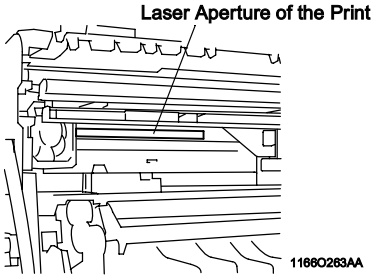
**CAUTION: The use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. Because of this, Minolta strongly recommends that you operate your copy machine only as described in this documentation.**

## Internal Laser Radiation

Maximum Average Radiation Power: 36.7μW at laser aperture of the print head unit

Wavelength: 770-810nm

This product employs a Class IIIb Laser Diode that emits an invisible laser beam.
The Laser Diode and Scanning Polygon Mirror are incorporated in the print head unit.
The print head unit is NOT A FIELD SERVICE ITEM.
Therefore, the print head unit should not be opened under any circumstances.




This figure shows the view inside the Right Side Door with the Imaging Unit removed.

## For United States

CDRH regulation
This copier is certified as a Class 1 Laser product under the Radiation Performance Standard according to the Food, Drug and Cosmetic Act of 1990. Compliance is mandatory for Laser products marketed in the United States and is reported to the Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration of the U.S. Department of Health and Human Services (DHHS). This means that the device does not produce hazardous laser radiation.

The label shown on page G-3 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

**CAUTION:** Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

This is a semiconductor laser. The maximum power of the laser diode is 5mW and the wavelength is 770-810nm.

**For Europe**

**CAUTION:** Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

This is a semiconductor laser. The maximum power of the laser diode is 5mW and the wavelength is 770-810nm.

**For Denmark**

**ADVARSEL**
Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion.
Undgå udsættelse for stråling.

Klasse 1 laser produkt der opfylder IEC60825 sikkerheds kravene.

**For Finland**

**LUOKAN 1 LASERLAITE**

**VAROITUS**
Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

**VARO**
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättomälle lasersäteilylle. Älä katso säteeseen.

**For Sweden**

**KLASS 1 LASER APPARAT**

**VARNING**
Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

**VARNING**
Osynlig laserstråining när denna del är öppnad och spärren är urkopplad. Betrakta ej stråien.

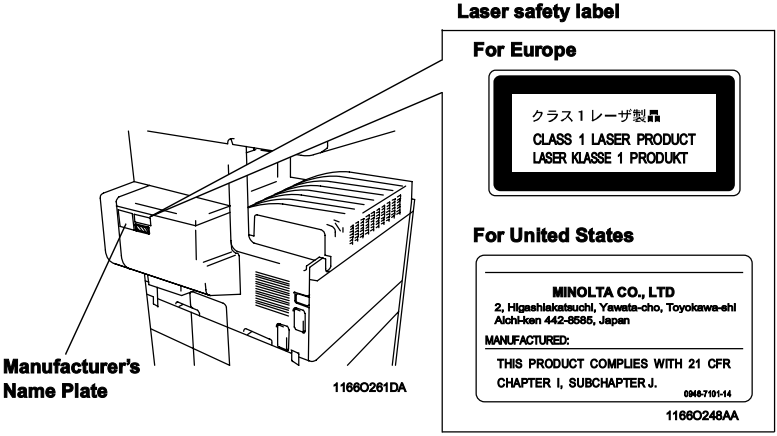
**For Norway**

**ADVERSEL**
Dersom apparatet brukes på annen måte enn spesifisert i denne bruksanvisning, kan brukeren utsettes för unsynlig laserstrålning, som overskrider grensen for laser klass 1.

Dette en halveder laser. Maksimal effekt till laserdiode er 5mW og bølgelengde er 770-810nm.

## Laser Safety Label

A laser safety label is attached to the outside of the copy machine as shown below.




The Manufacturer's Name Plate is affixed at the position illustrated above.
Please write down the Model Name and Serial No. of your copier here.

| |
|---|
| Model: |
| Serial No.: |

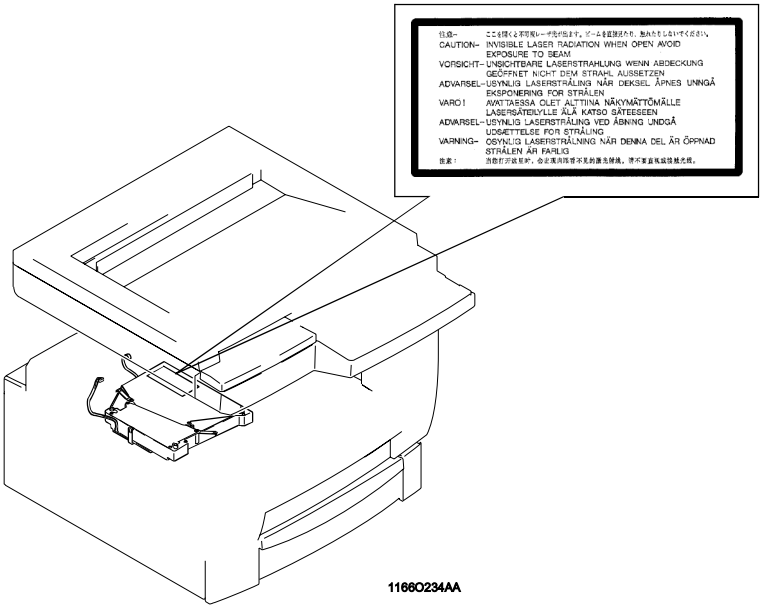
## Label inside copy machine

The following laser safety label will be attached inside the copy machine as shown below.

**Please read the following for your own protection.**

**⚠ Caution**

Opening the cover indicated by the Caution label may expose you to harmful laser radiation which could cause damage or loss of eyesight. Do not open the cover when the power is on.


注意–
ここを開くと不可視レーザー光が出ます。ビームを直接浴びる、触れたりしないでください。
CAUTION– INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
VORSICHT– UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
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VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEN
ADVARSEL– USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
VARNING– OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD STRÅLEN ÄR FARLIG
注意：
1166O234AA

ALL Areas

CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according
to the manufacturer's instructions.

Germany only

VORSICHT!
Explosinsgefahr bei unsachgemäßen austausch der
batterie. Ersatz nur durch denselben oder einen vom hersteller
empfohlenen ähnlichen typ. Entsorgung gebrauchter batterien
nach angaben des herstellers.

Denmark only

ADVARSEL!
Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Norway only

ADVARSEL
Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende
type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens
instruksjoner.

Sweden only

VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

Finland only

VAROITUS
Paristo voi räjähtää, los se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden
mukaisesti.

ALL Areas

CAUTION

"Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used IC Package according to the manufacturer's instructions."

Germany only

VORSICHT!

⇒"Austausch nur durch denselben oder einen vom Hersteller empfohlenen, gleichwertigen typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

## Service Precautions

**(1) Precautions**

Refer to DISASSEMBLY/CLEANING for the Disassembly procedure.

1. When unplugging connectors on the P.W.B.s themselves, always make sure the power is OFF first. Be sure to unplug the copier before disassembling and cleaning.
2. Always unplug connectors by holding the connector housing. Pulling on the wires can lead to problems with poor contact.
3. It is recommended that a body ground not be used when carrying out any troubleshooting procedure. Be sure to ground DC lines to a ground test point on the P.W.B.

**(2) At Replacement/Adjustment/Cleaning**

1. Be sure to handle the Fusing Unit carefully. It remains hot a while after the copier is turned off.
2. Do not disassemble the Imaging Cartridge or Print Head Unit.
3. Do not expose the PC Drum of the Imaging Cartridge to direct sunlight or to room lighting for more than 5 minutes.
4. Turn off the power before removing the Print Head Unit to protect the eyes from possible exposure to the laser beam.
5. Use only a Fuse of the indicated rating.

**(3) During Operation**

1. Keep your hands, clothing, etc. well away from operating or rotating parts.
2. Never touch the terminals of electrical parts or high voltage parts.
3. This copier uses an invisible laser beam. To prevent a laser beam leak, the copier performs a trial run to make sure the covers are in position.

## Handling the P.W.B.

Observe the following precautions when handling a P.W.B. with ICs.

**(1) During Transportation/Storage**

1. During transport and storage, P.W.B.s should be kept in conductive bags or on mats and not taken out unless absolutely necessary.
2. P.W.B.s should be stored in a place where direct sunlight does not strike them.
3. Do not touch IC terminals with your hands.

**(2) At Replacement**

1. Before removing connectors from a P.W.B., make sure the copier has been unplugged.
2. When P.W.B.s are taken out of their conductive bags or off their mats, hold them by their edges to avoid touching the terminals or the patterned surfaces.
3. Before installing connectors on a P.W.B., make sure the copier has been unplugged.

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# 2 SPECIFICATIONS

| | | |
|---|---|---|
| TYPE | : | Console/Desktop Type |
| PHOTOCONDUCTOR | : | Organic Photoconductor |
| COPYING SYSTEM | : | Electrostatic Dry Powdered Image Transfer to Plain Paper with a Laser |
| ORIGINAL SCANNING RESOLUTION | : | 600 dpi |
| PAPER FEEDING SYSTEM | : | 3-way system ┬ Manual Feed Tray: Single sheet feeding<br>├ Multi-Purpose (MP) Cassette:<br>Plain paper: Approx. 250 sheets<br>Special paper: Approx. 20 sheets<br>└ 500-Sheet Cassette: Approx. 500 sheets |
| EXPOSURE SYSTEM | : | Mirror Scanning, Slit Exposure |
| DEVELOPING SYSTEM | : | MT-HG System |
| CHARGING SYSTEM | : | Comb Electrode (1) DC Negative Corona with Scorotron System |
| IMAGE TRANSFER | : | Roller Image Transfer |
| PAPER SEPARATING SYSTEM | : | Paper Separator Fingers and Charge Neutralizing Plate |
| FUSING SYSTEM | : | Heat Roller |
| PAPER DISCHARGING SYSTEM | : | Charge Neutralizing Brush |
| MAXIMUM ORIGINAL SIZE | : | A3L, 11" × 17"L |

COPY MEDIUM

| Paper Source | | MP Cassette | Manual Feed Tray |
|---|---|---|---|
| Medium | Plain paper (60 to 90 g/m$^2$) | ○ | ○ |
| | Transparencies | ○ | ○ |
| | Thick paper (91 to 157 g/m$^2$) | ○ | ○ |
| | Postcards (190 g/m$^2$) | ○ | ○ |
| | Recycled paper | ○ | ○ |
| Dimensions | Maximum (Width × Length) | 297 × 432 mm | 297 × 432 mm |
| | Minimum (Width × Length) | 90 × 140 mm | 90 × 140 mm |

○: Permissible –: Not permissible

| | | |
|---|---|---|
| MULTIPLE COPIES | : | 1 to 99 |
| WARMING-UP TIME | : | 60 sec. or less with room temperature of 23°C and rated power voltage |
| FIRST COPY TIME | : | 5.8 sec. (A4C, MP Cassette, full size mode)<br>5.9 sec. (8-1/2" × 11"C, MP Cassette, full size mode) |

CONTINUOUS COPY SPEED (copies/min.)

- Metric -

| Size | Speed |
|---|---|
| A3L | 14 |
| B4L | 16 |
| A4L | 19 |
| A4C | 25 |
| B5L | 22 |
| B5C | 29 |

- Inch -

| Size | Speed |
|---|---|
| 11" × 17"L | 14 |
| 8-1/2" × 14"L | 17 |
| 8-1/2" × 11"L | 20 |
| 8-1/2" × 11"C | 25 |

ZOOM RATIOS

| | | - Metric - | - Inch - |
|---|---|---|---|
| Fixed | Full Size | × 1.000 | × 1.000 |
| | Enlargement | × 2.000 | × 2.000 |
| | | × 1.414 | × 1.545 |
| | | × 1.224 | × 1.294 |
| | | × 1.154 | × 1.214 |
| | Reduction | × 0.866 | × 0.785 |
| | | × 0.816 | × 0.733 |
| | | × 0.707 | × 0.647 |
| | | × 0.500 | × 0.500 |
| Variable | 25% to 400% (in 0.1% increments) | | |

LENS : Through Lens (F = 4.0, f = 62 mm)
EXPOSURE LAMP : Fluorescent Lamp
FUSING TEMPERATURE : 190°C

POWER/CURRENT CONSUMPTION (Copier Only)

| Exposure Lamp (Rating) | Fusing Roller Heater Lamp (Rating) | Max. Power Consumption (full system) | Max. Current Consumption (full system) |
|---|---|---|---|
| 24V<br>20W | 660W | 850W | 120V, 8A<br>230V, 4A |

POWER REQUIREMENTS : 120V, 230V, 50/60Hz

ENVIRONMENTAL CONDITIONS

| | |
|---|---|
| Temperature | 10 to 32°C with a fluctuation of 10°C or less per hour |
| Humidity | 15 to 85% RH with a fluctuation of 10% RH or less per hour |
| Ambient Illumination | 3,000 lux or less |
| Levelness | 1° (1.75 mm/100 mm) |

DIMENSIONS : Width ... 566 mm, 22-1/4"
Depth ... 707 mm, 27-3/4"
Height ... 635 mm, 25"

WEIGHT : 53.5 kg, 118 lbs.

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# 3 PRECAUTIONS FOR INSTALLATION

**Installation Site**

To ensure safety and utmost performance of the copier, the copier should NOT be used in a place:

- Where it will be subjected to extremely high or low temperature or humidity.
- Which is exposed to direct sunlight.
- Which is in the direct air stream of an air conditioner, heater or ventilator.
- Which puts the operator in the direct stream of exhaust from the copier.
- Which has poor ventilation.
- Where ammonia gas might be generated.
- Which does not have a stable, level floor.
- Where it will be subjected to sudden fluctuations in either temperature or humidity. If a cold room is quickly heated, condensation forms inside the copier, resulting in blank spots in the copy.
- Which is near any kind of heating device.
- Where it may be splashed with water.
- Which is dirty or where it will receive undue vibration.
- Which is near volatile flammables or curtains.

**Power Source**

Use an outlet with a capacity of 120V/8A, or 220V to 240V/4A or more.

- If any other electrical equipment is sourced from the same power outlet, make sure that the capacity of the outlet is not exceeded.
- Use a power source with little voltage fluctuation.
- Never connect by means of a multiple socket any other appliances or machines to the outlet being used for the copier.
- Make the following checks at frequent intervals:
  - ✱ Is the power plug abnormally hot?
  - ✱ Are there any cracks or scrapes in the cord?
  - ✱ Has the power plug been inserted fully into the outlet?
  - ✱ Does something, including the copier itself, ride on the power cord?
- Ensure that the copier does not ride on the power cord or communications cable of other electrical equipment, and that it does not become wedged into or underneath the mechanism.

**Grounding**

To prevent receiving electrical shocks in the case of electrical leakage, always ground the copier.

- Connect the ground wire to:
  - ✱ The ground terminal of the outlet.
  - ✱ A grounding contact which complies with the local electrical standards.
- Never connect the ground wire to a gas pipe, the ground wire for a telephone, or a water pipe.

1170SBG0400A

# 4 PRECAUTIONS FOR USE

To ensure that the copier is used in an optimum condition, observe the following precautions.

- Never place a heavy object on the copier or subject the copier to shocks.
- Insert the power plug all the way into the outlet.
- Do not attempt to remove any panel or cover which is secured while the copier is making copies.
- Do not turn OFF the Power Switch while the copier is making copies.
- Provide good ventilation when making a large number of copies continuously.
- Never use flammable sprays near the copier.
- If the copier becomes inordinately hot or produces abnormal noise, turn it OFF and unplug it.
- Do not turn ON the Power Switch at the same time when you plug the power cord into the outlet.
- When unplugging the power cord, do not pull on the cord; hold the plug and pull it out.
- Do not bring any magnetized object near the copier.
- Do not place a vase or vessel containing water on the copier.
- Be sure to turn OFF the Power Switch at the end of the workday or upon power failure.
- Use care not to drop paper clips, staples, or other small pieces of metal into the copier.

**Operating Environment**

The operating environmental requirements of the copier are as follows:

- Temperature: 10°C to 32°C with a fluctuation of 10°C per hour
- Humidity: 15% to 85% RH with a fluctuation of 10% RH per hour

**Power Requirements**

The power source voltage requirements are as follows:

- Voltage Fluctuation: AC120/230V
  - ±10% (Copying performance assured)
  - +10% -15% (Paper feeding performance assured)
- Frequency Fluctuation: 50/60 Hz ±0.3%

1170SBG0500A

## 5 HANDLING OF THE CONSUMABLES

Before using any consumable, always read the label on the container carefully.

- Use the right toner. The applicable copier model name is indicated on the toner bottle.
- Paper is easily damaged by dampness. To prevent absorption of moisture, store paper, which has been removed from its wrapper but not loaded into the drawer, in a sealed plastic bag in a cool, dark place.
- Keep consumables out of the reach of children.
- Do not touch the PC Drum with bare hands.
- Store the paper, toner, and other consumables in a place free from direct sunlight and away from any heating apparatus.
- The same sized paper is of two kinds, short grain and long grain. Short grain paper should only be fed through the copier crosswise, long grain paper should only be fed lengthwise.
- If your hands become soiled with toner, wash them with soap and water immediately.
- Do not throw away any used consumables (PC Drum, starter, toner, etc.). They are to be collected.

---

*NOTE*

*Do not burn, bury in the ground, or throw into the water any consumables (PC Drum, starter, toner, etc.).*

---

1170SBG0600A

## 6 OTHER PRECAUTIONS

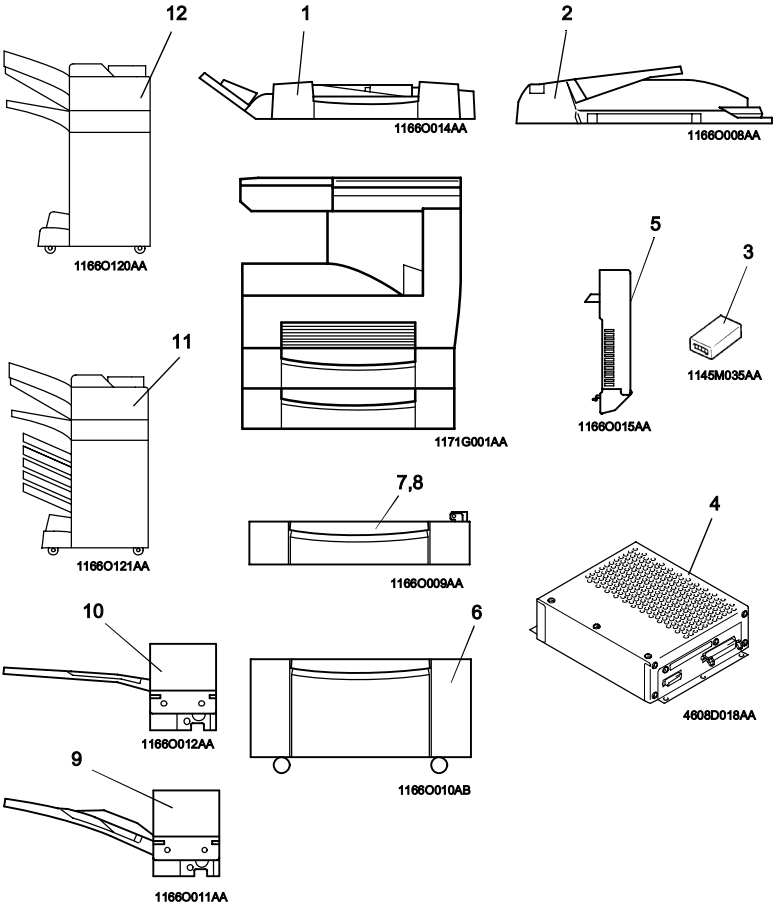
The Print Head Unit of this copier uses a laser diode that emits a laser beam. Use the following precautions when performing service jobs at the users' premises.

- When a service job needs to be performed in the laser beam path, such as when working around the Print Head Unit and PC Drum, be sure first to turn the copier OFF.
- If the job requires that the power cord be left plugged in, observe the following precautions

1. Take off your watch, ring, and any other reflective object and wear laser protective goggles.
2. At the job site, select a place that is as far as possible away from the users and that is enclosed by walls.
3. Do not bring a highly reflective tool into the laser beam path during the service job.

1170SBG0700A

# 7 SYSTEM OPTIONS




1. Duplexing Document Feeder (AFR-14)
2. Automatic Document Feeder (AF-6)
3. Plug-In Counter
4. Printer Controller (Pi3500)
5. Duplex Unit (AD-10)
6. Large Capacity Cabinet (PF-106)
7. Paper Feed Unit (PF-108)
8. Paper Feed Unit (PF-110)
9. Shift Tray (OT-100)
10. Job Tray (JS-200)
11. Mailbin Finisher (FN-500)
12. Finisher (FN-100)

# Di250

## MECHANICAL/ ELECTRICAL

MINOLTA

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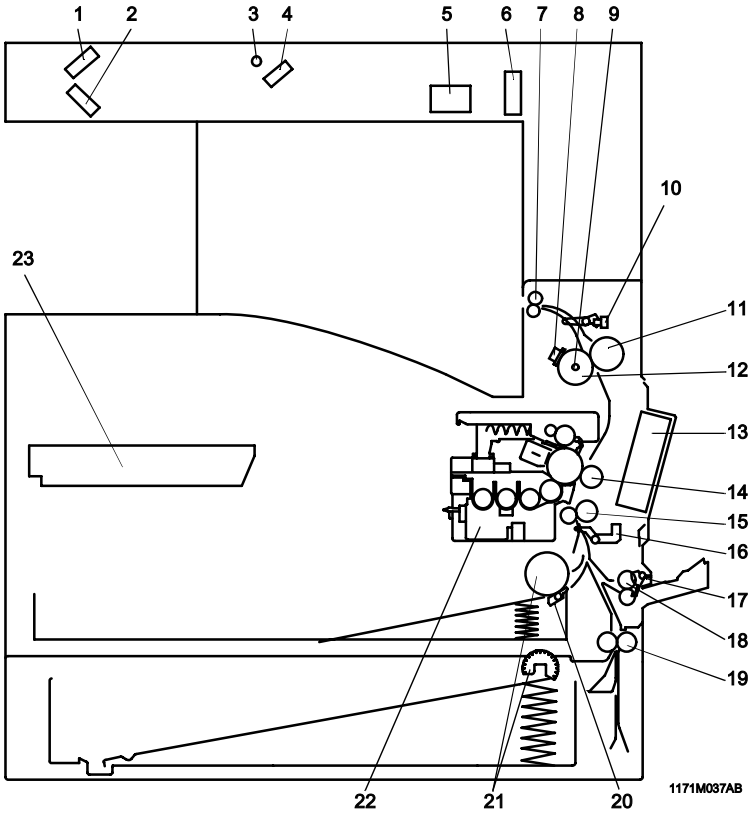
# 1 CROSS-SECTIONAL VIEW




1. 2nd Mirror
2. 3rd Mirror
3. Exposure Lamp
4. 1st Mirror
5. Lens
6. CCD Unit
7. Paper Exit Roller
8. Fusing Roller Thermostat (TS1)
9. Fusing Roller Heater Lamp (H1)
10. Paper Exit Sensor (PC3)
11. Right Fusing Roller
12. Left Fusing Roller
13. Fusing Cooling Fan Motor (M3)
14. Image Transfer Roller
15. Synchronizing Roller
16. Synchronizing Roller Sensor (PC2)
17. Manual Feed Paper Take-Up Sensor (PC8)
18. Manual Feed Paper Take-Up Roll
19. Vertical Transport Roller
20. Paper Separator Pad
21. Paper Take-Up Roll
22. Imaging Cartridge (I/C)
23. PH Unit

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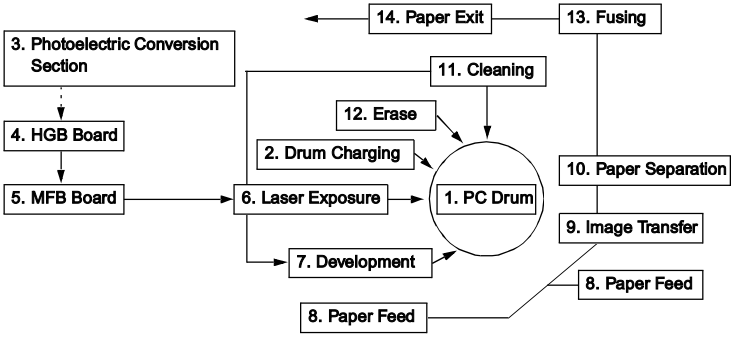
# 2 COPYING PROCESS




1. PC Drum
- The drum is an aluminum cylinder coated with photosensitive material on which an electrostatic latent image is produced.

2. Drum Charging
- A scorotron charger employing a comb electrode generates a negative DC charged layer on the surface of the PC Drum.

3. Photoelectric Conversion Section
- The Exposure Lamp directs light onto the original. The light reflected off the original is directed and resized by the mirrors and lens so as to produce a reduced-size image on the CCD Sensor.

4. HGB Board
- Converts an electric signal into a corresponding 8-bit digital image signal (A/D conversion), makes various corrections, and outputs the results to the MFB Board.

5. MFB Board
- Compresses the image data received from the HGB Board, stores it, and uncompresses it.

6. Laser Exposure
- The laser beam emitted from the LD (laser diode) strikes the surface of the PC Drum, creating an electrostatic latent image.

7. Development
- Negatively charged toner adheres to the latent image on the PC Drum surface, creating a visible image.

8. Paper Feed
- Feeds sheets of paper from the appropriate paper source.

9. Image Transfer
- An Image Transfer Roller is used. A positive charge applied to the roller causes the visible image on the surface of the PC Drum to transfer onto the front side of the paper.

10. Paper Separation
- The PC Drum Separator Fingers remove paper from the surface of the PC Drum.

11. Cleaning
- The Cleaning Blade scrapes residual toner off the surface of the PC Drum and the toner is recycled back to the Developing Unit.

12. Erase
- The PC Drum is exposed to light, which effectively removes any residual charge from the drum surface.

13. Fusing
- Heat and pressure applied by the Right and Left Fusing Rollers fuse toner on the paper.

14. Paper Exit
- Feeds paper out of the copier.

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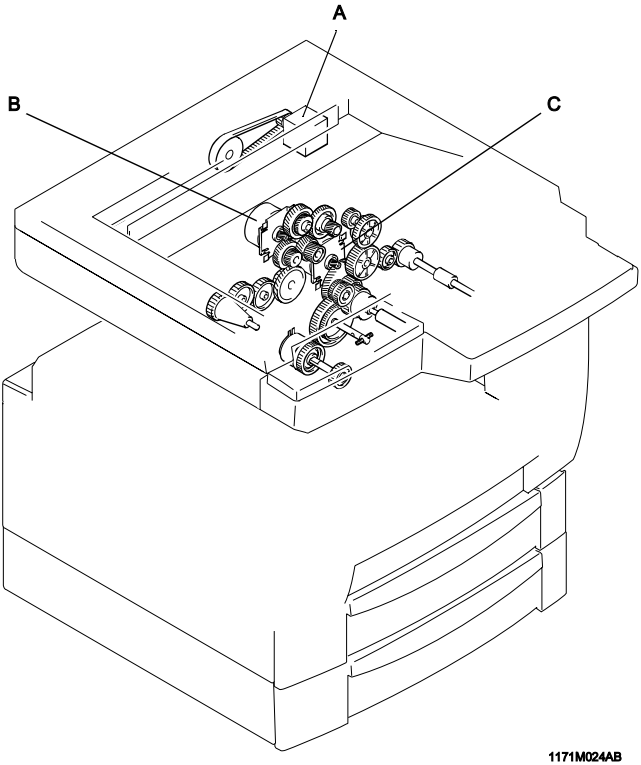
# 3 DRIVE SYSTEM

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A. Scanner Motor (M5)
   Drives the Scanner and 2nd/3rd Mirrors Carriage.
B. I/C Motor (M1)
   Drives the I/C Unit.
C. Main Motor (M2)
   Drives the Paper Take-Up Roll, Manual Feed Paper Take-Up Roll, Synchronizing Roller, Image Transfer Roller, and Fusing Unit.

1170SBM0400A

# 4 OPERATING SEQUENCE

**A** The power cord is plugged into the power outlet.

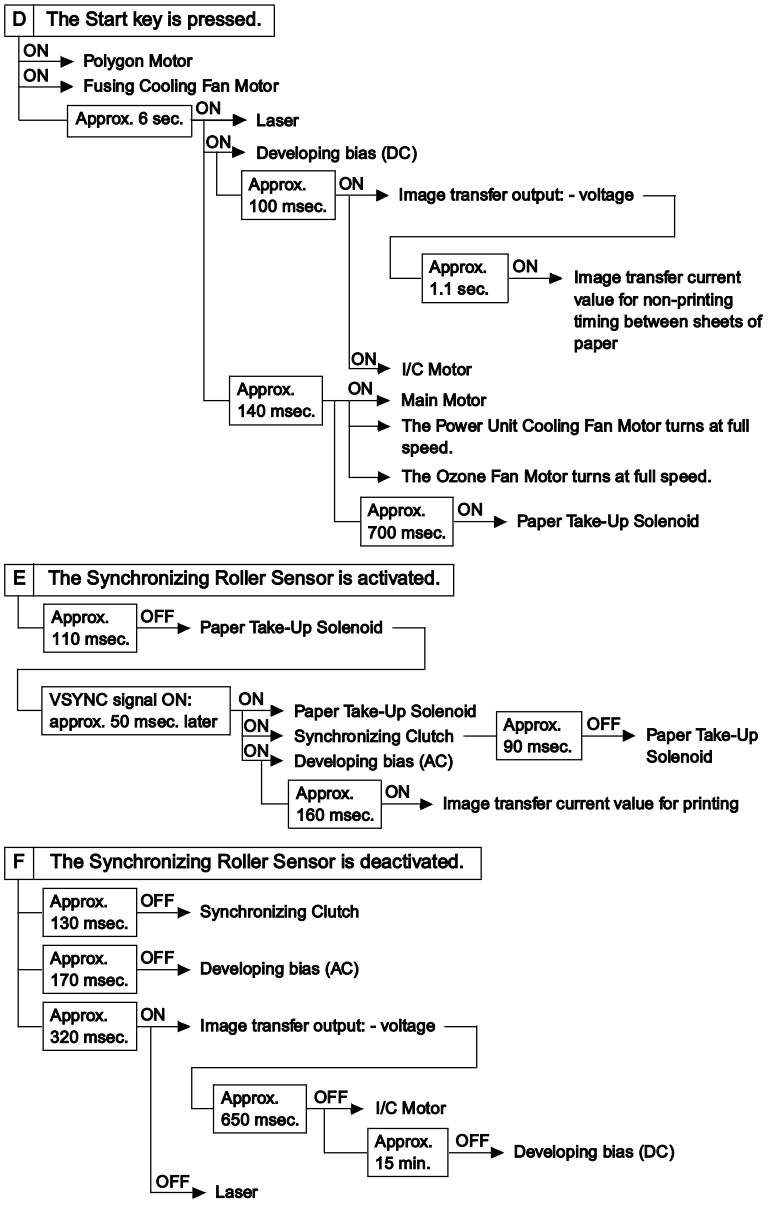
- ON → The Power Supply Unit outputs DC24V for the Dehumidifying Heater (option).

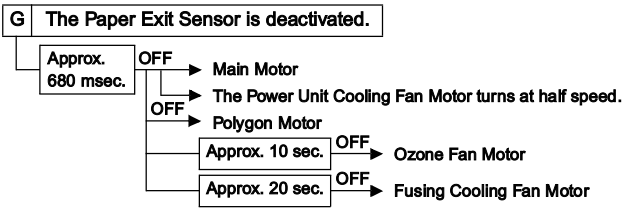
**B** The Power Switch is turned ON.

- ON → DC voltage output
- ON → Control panel display
- Approx. 560 msec. → ON → Fusing Roller Heater Lamp

**C** The warming-up cycle is completed.

- ON → Main Motor — Approx. 20 sec. → OFF → Predrive stops
- ON → Power Unit Cooling Fan Motor turns at full speed. → OFF → Power Unit Cooling Fan Motor turns at half speed.
- ON → Developing bias (DC)
  - Approx. 100 msec. → ON → I/C Motor
  - ON → Image transfer output: - voltage
    - Approx. 700 msec. → ON → Image transfer output: + voltage
      - Approx. 400 msec. → ON → Image transfer output: - voltage
        - Approx. 400 msec. → ON → Image transfer output: + voltage
          - Approx. 400 msec. → ON → Image transfer output: - voltage
            - T/C ratio is checked for abnormality for approx. 28 sec.
              - Normal T/C / Abnormal T/C: approx. 31 sec. → OFF → I/C Motor
                - Approx. 400 msec. → OFF → Image transfer output
                - Approx. 15 min. → OFF → Developing bias (DC)


D The Start key is pressed.
ON Polygon Motor
ON Fusing Cooling Fan Motor
Approx. 6 sec. ON Laser
ON Developing bias (DC)
Approx. 100 msec. ON Image transfer output: - voltage
Approx. 1.1 sec. ON Image transfer current value for non-printing timing between sheets of paper
ON I/C Motor
Approx. 140 msec. ON Main Motor
The Power Unit Cooling Fan Motor turns at full speed.
The Ozone Fan Motor turns at full speed.
Approx. 700 msec. ON Paper Take-Up Solenoid
E The Synchronizing Roller Sensor is activated.
Approx. 110 msec. OFF Paper Take-Up Solenoid
VSYNC signal ON: approx. 50 msec. later ON Paper Take-Up Solenoid
ON Synchronizing Clutch
ON Developing bias (AC)
Approx. 90 msec. OFF Paper Take-Up Solenoid
Approx. 160 msec. ON Image transfer current value for printing
F The Synchronizing Roller Sensor is deactivated.
Approx. 130 msec. OFF Synchronizing Clutch
Approx. 170 msec. OFF Developing bias (AC)
Approx. 320 msec. ON Image transfer output: - voltage
Approx. 650 msec. OFF I/C Motor
Approx. 15 min. OFF Developing bias (DC)
OFF Laser


G
The Paper Exit Sensor is deactivated.
Approx. 680 msec.
OFF
Main Motor
The Power Unit Cooling Fan Motor turns at half speed.
OFF
Polygon Motor
Approx. 10 sec.
OFF
Ozone Fan Motor
Approx. 20 sec.
OFF
Fusing Cooling Fan Motor

1170SBM0500A

# 5 CPU OVERRUN MONITOR FUNCTION

- CPU Overrun Monitor Function (Watchdog Function)
  The watchdog function is a self-monitoring function that determines whether any of the CPUs mounted on the control board overrun.
- If this function detects that a CPU overruns, the copier automatically resets the CPU, thereby restarting the logic circuit and mechanism.
- Even if a copier CPU operates erratically due to electrical noise, therefore, the copier is able to recover from the faulty condition so that the number of visits made by the Tech. Rep. for CPU overrun can be minimized.

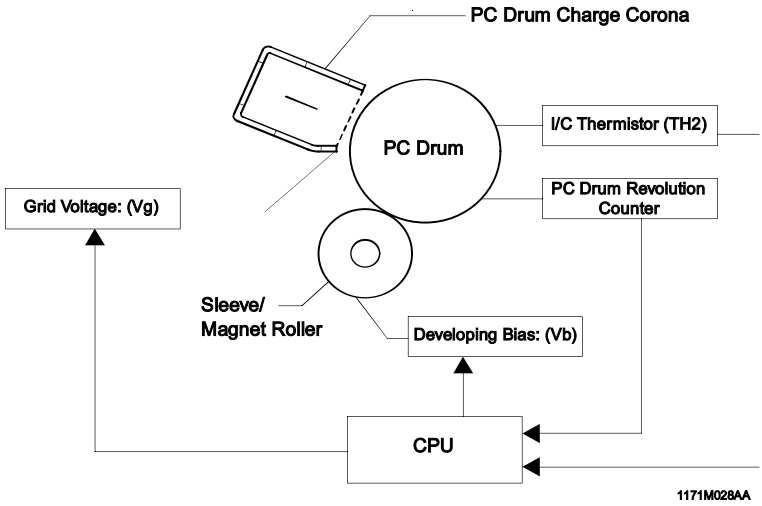
- Processing performed during watchdog function:
  If a faulty condition is detected, the copier resets the CPU and performs a restart sequence. Since this sequence of operations is performed even during a copy cycle, the copier detects a sheet or sheets of paper left inside it as a misfeed while it is being restarted.

1170SBM0600A

# 6 IMAGE STABILIZATION SYSTEM

- The following image stabilization controls are provided to ensure stabilized copy image.

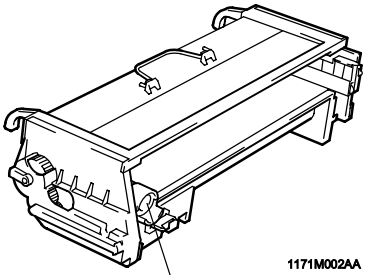
| Item | Purpose | Control |
|---|---|---|
| PC Drum temperature correction | To compensate for any change in ID due to changing PC Drum temperatures. | The I/C Thermistor is used to detect temperature and, according to the detected temperature, Vg/Vb is corrected. |
| PC Drum deterioration correction | To compensate for degraded sensitivity caused by a deteriorating PC Drum. | Corrects Vg according to the period of time during which the PC Drum has turned. |



1170SBM0700A

# 7 IMAGING CARTRIDGE (I/C)

- This copier employs an Imaging Cartridge ("I/C" in this manual) that contains a PC Drum, PC Drum Charge Corona, Developing Unit, and Cleaning Unit as one unit.



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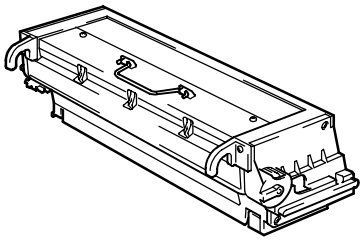
Toner Supply Port



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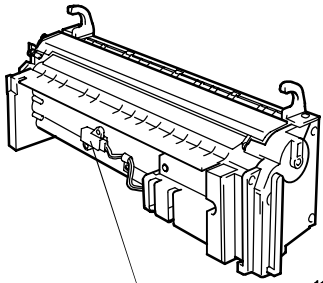

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ATDC Sensor (E1)

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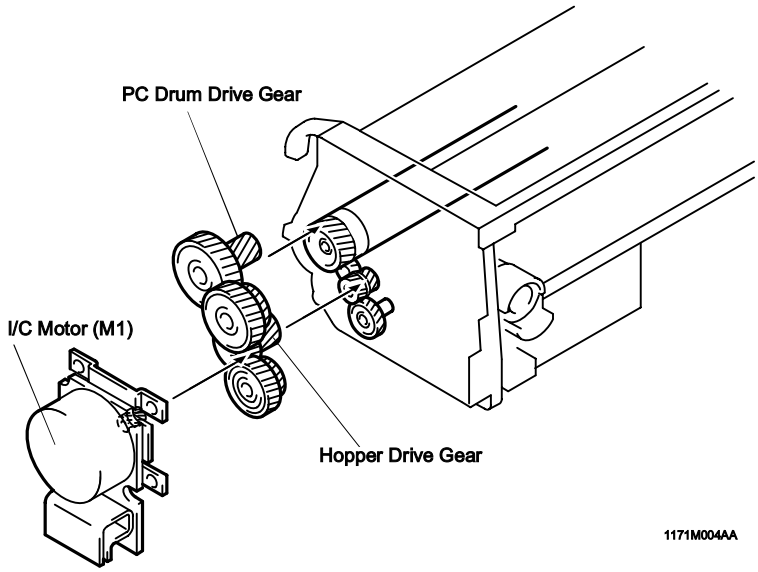
## 7-1. I/C Drive Mechanism

- Drive from the I/C Motor is transmitted via a gear train to the PC Drum and Hopper.




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M1 | PJ16A-3 | L | H |

1170SBM0702A
## 7-2. Identification and Life of I/C

- When the Start key is pressed or the Side Cover is opened and closed, the copier determines whether the I/C is new or one which has been used previously.
- The copier monitors the I/C life by storing in memory the period of time during which the PC Drum has turned. The data is cleared when a new I/C is installed in the copier.

1170SBM0800A

# 8 PC DRUM

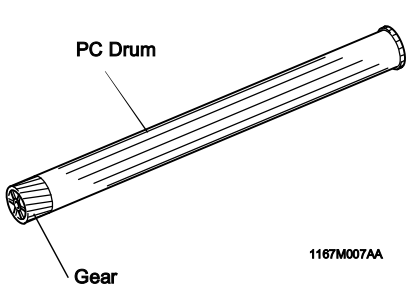
- The PC Drum used in this copier is the organic photoconductor (OPC) type. The drum consists of an aluminum base coated with a charge generation layer and a charge transport layer.

---

Handling Precautions

Prolonged exposure to light can cause the photoconductor surface of the drum to suffer light fatigue, resulting in a loss of photosensitivity. If the I/C is removed from the copier, it should be wrapped in a soft, clean, opaque cloth or other protective covering to prevent exposure to light.

---

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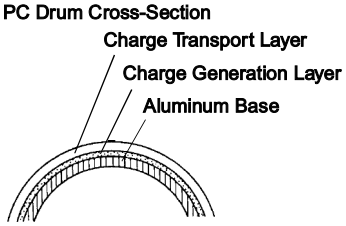
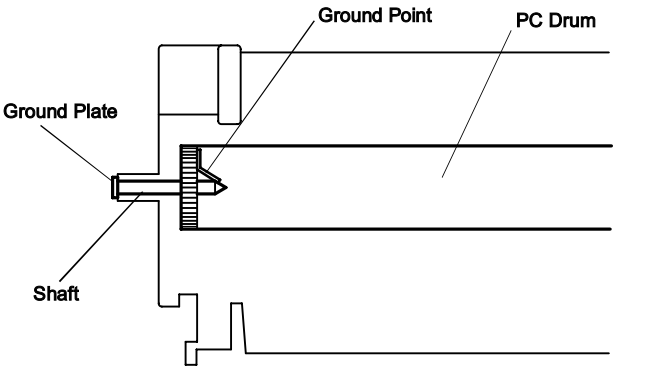



1139M007AA

- Grounding of the PC Drum
  The PC Drum ground point is located inside and at the front end of the I/C as viewed from the front of the copier and in constant contact with the Drum Holding Shaft. When the I/C is installed in the copier, the Drum Holding Shaft contacts the ground point. This provides for assured grounding of the PC Drum through the ground plate in the rear to the frame of the copier.

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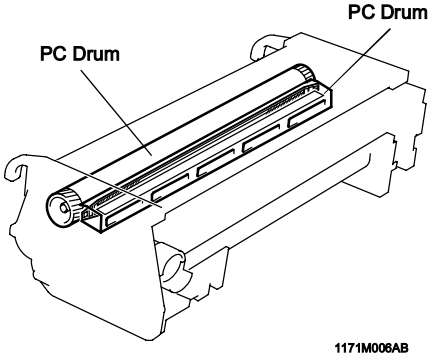
# 9 DRUM CHARGING

- A scorotron charger system generates a negative DC corona discharge onto the PC Drum surface. The grid mesh ensures uniform charging.
- The grid voltage (Vg) applied to the grid mesh is controlled by the constant voltage circuitry within the High Voltage Unit. It is varied through image stabilization control.
- To restrict ozone production, the copier uses a PC Drum Charge Corona with a comb electrode.

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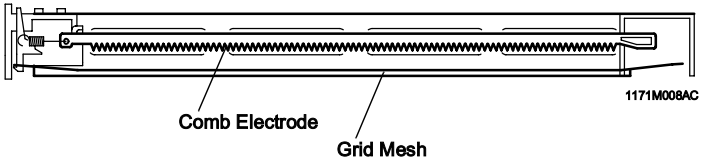


1171M008AC

| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| Drum charging output | PJ14A-3A | L | H |

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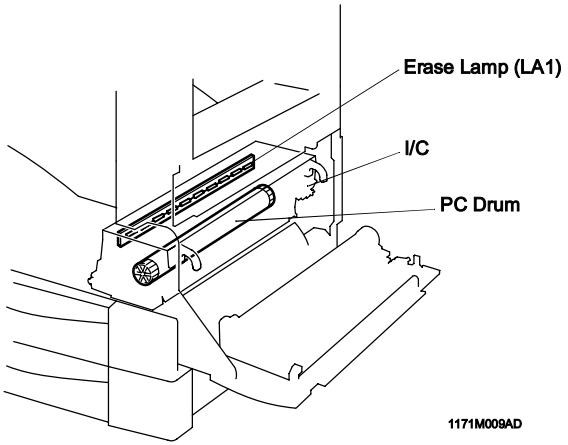
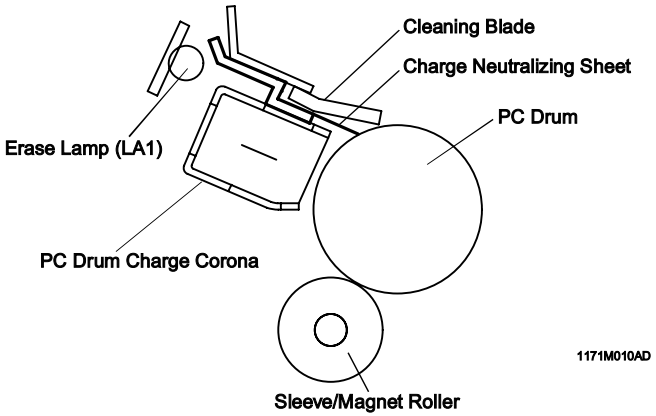
# 10 ERASE LAMP

- Any potential remaining on the surface of the PC Drum is neutralized by both light from the Erase Lamp and a DC negative voltage applied by the Charge Neutralizing Sheet.
- The Charge Neutralizing Sheet applies a negative charge on the surface of the PC Drum which is positively charged by the Image Transfer Roller. A voltage of -820V is applied to the Charge Neutralizing Sheet from the High Voltage Unit. The Erase Lamp then illuminates the surface of the PC Drum to further neutralize it.
- The Erase Lamp consists of ten tungsten lamps.



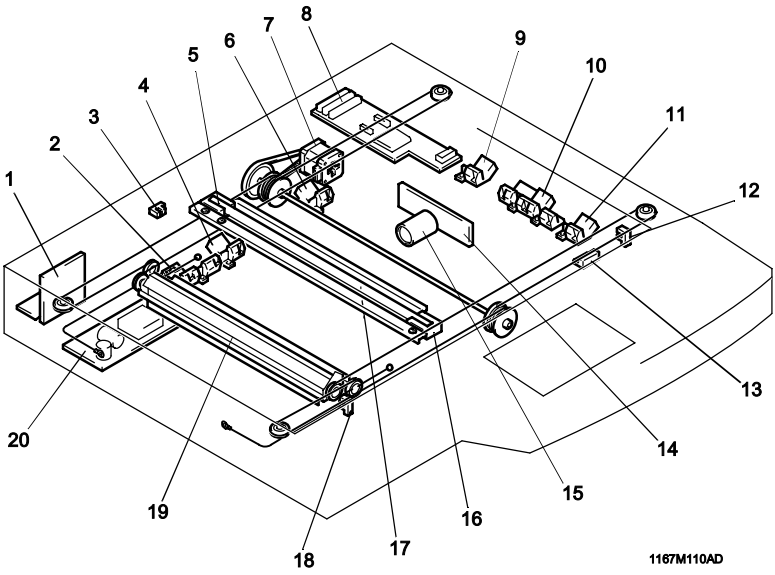




| Electrical Component | Control Signal | All lamps ON | Standby ON |
|---|---|---|---|
| LA1 | PJ11A-6A | H | L |

1170SBM1100A

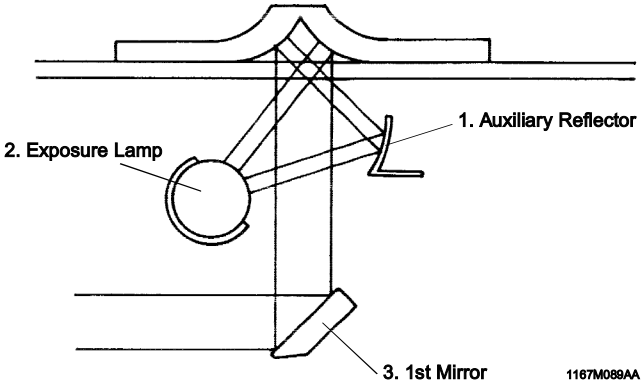
# 11 IR SECTION

- Light reflected from the original passes through three mirrors and a lens to form a reduced image on the CCD Sensor as the Scanner is moved by the Scanner Motor. The CCD sensor converts the light pattern (image data) into an electrical image signal.
- The electrical image signal is then output to the MFB Board.




1. BCR Board (BCR)
2. Original Size Detecting Sensor 5 (UN8)
3. Original Cover Detecting Sensor (PC14)
4. Original Size Detecting Sensor 4 (UN7)
5. Exposure Lamp (LA2)
6. Original Size Detecting Sensor 6 (UN9)
7. Scanner Motor (M5)
8. HGB Board (HGB)
9. Original Size Detecting Sensor 1 (UN4)
10. Original Size Detecting Sensor 2 (UN5)
11. Original Size Detecting Sensor 3 (UN6)
12. Scanner Home Position Sensor 1 (PC12)
13. Size Reset Switch (S5)
14. CCD Board (CCD)
15. Lens
16. Scanner
17. 1st Mirror
18. Scanner Home Position Sensor 2 (PC13)
19. 2nd/3rd Mirrors Carriage
20. Inverter Board (INV)

1170SBM1101A
## 11-1. Exposure Section: Construction and Function



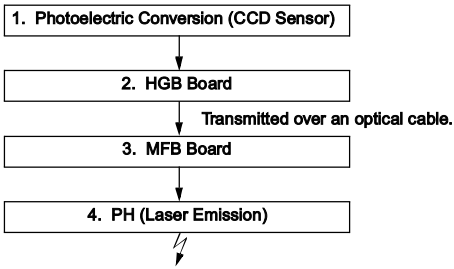

1. Auxiliary Reflector
   When a book or other bound original is copied, the paper in the area near the binding generally fails to come flush against the glass, so that the copy of these areas is generally too dark. The Auxiliary Reflector reduces this problem by reflecting light from the Exposure Lamp onto these areas of the original.
2. Exposure Lamp
   A fluorescent lamp is used to illuminate the original.
3. 1st Mirror
   Directs the reflected light from the original to the 2nd Mirror.

| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| LA2 | CN13BCR-1 | L | H |

1170SBM1102A

## 11-2. Image Processing Flow

- Image processing is made up of the following blocks.




1. Photoelectric Conversion (CCD Sensor)
- Light reflected off the original is received through mirrors and lens by the CCD Sensor which, in turn, outputs the corresponding data to the HGB Board.

2. HGB Board
- After converting the data received from the CCD to an analog signal, the board converts it to 8-bit image data (A/D conversion). It further makes various corrections and outputs the resultant image data to the MFB Board over an optical cable.

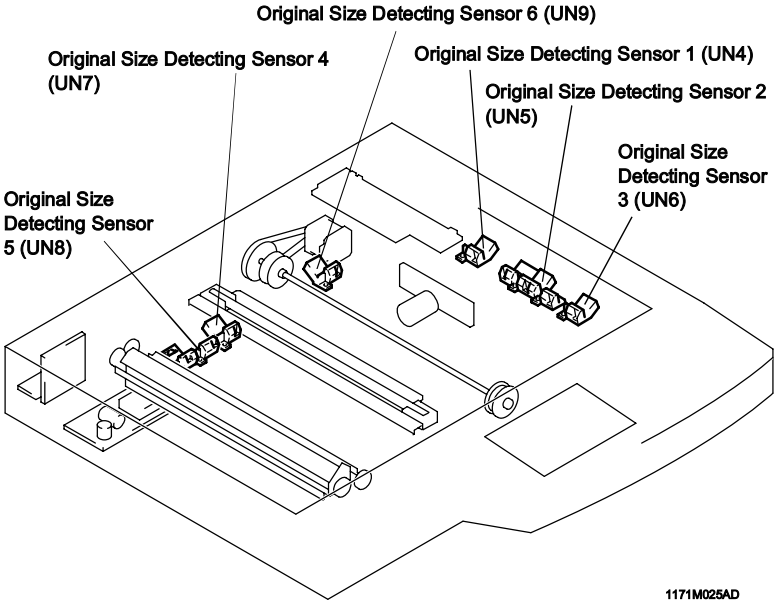
3. MFB Board
- This board compresses the image data received from the HGB Board, stores it, and uncompresses it.
- The image memory has a standard capacity of 16MB and can be expanded up to 64MB (optional).

4. PH
- Emits a laser beam according to the image data provided by the MFB Board to expose the surface of the PC Drum.

1170SBM1103A

## 11-3. Original Size Detection

- When the copier is in Auto Paper or Auto Size, the sensors mounted in the IR receive light reflected off the original to allow the copier to determine the original size.


Original Size Detecting Sensor 6 (UN9)
Original Size Detecting Sensor 4 (UN7)
Original Size Detecting Sensor 1 (UN4)
Original Size Detecting Sensor 2 (UN5)
Original Size Detecting Sensor 3 (UN6)
Original Size Detecting Sensor 5 (UN8)
1171M025AD

| Electrical Component | Control Signal | Blocked | Unblocked |
|---|---|---|---|
| UN4 | CN4BCR-4 | L | H |
| UN5 | CN5BCR-7 | L | H |
| UN6 | CN11HGB-4 | L | H |
| UN7 | CN6BCR-4 | L | H |
| UN8 | CN9HGB-1 | L | H |
| UN9 | CN8BCR-4 | L | H |

<Original Size Identification: Metric Areas>

| Original Size | UN4 | UN5 | | | UN6 | UN7 | UN8 | | UN9 |
|---|---|---|---|---|---|---|---|---|---|
| | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 |
| 11" × 17" | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ |
| A3L | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| A4L | ○ | ○ | | | | ○ | | | ○ |
| A4C | ○ | ○ | ○ | ○ | ○ | | | | ○ |
| A5L | | | | | | | | | ○ |
| B4L | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ |
| FLS | ○ | ○ | | | | ○ | ○ | | ○ |
| Letter L | ○ | ○ | | | | | | | ○ |
| Letter C | ○ | ○ | ○ | ○ | | | | | ○ |
| Legal | ○ | ○ | | | | ○ | ○ | ○ | ○ |

○: Detected by sensor; L: Lengthwise; C: Crosswise

***NOTE***
*UN4, UN6 and UN8 are options.*

<Original Size Identification: Inch Areas>

| Original Size | UN5 | | | UN6 | UN7 | UN8 | | UN9 |
|---|---|---|---|---|---|---|---|---|
| | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 |
| 11" × 17" | ○ | ○ | ○ | | ○ | ○ | ○ | ○ |
| A3L | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| A4L | ○ | | | | ○ | | | ○ |
| A4C | ○ | ○ | ○ | ○ | | | | ○ |
| B4L | ○ | ○ | | | ○ | ○ | ○ | ○ |
| 5-1/2" × 8-1/2"L | | | | | | | | ○ |
| FLS | ○ | | | | ○ | ○ | | ○ |
| B5C | ○ | ○ | | | | | | ○ |
| Letter L | ○ | | | | | | | ○ |
| Letter C | ○ | ○ | ○ | | | | | ○ |
| Legal | ○ | | | | ○ | ○ | ○ | ○ |

○: Detected by sensor; L: Lengthwise; C: Crosswise

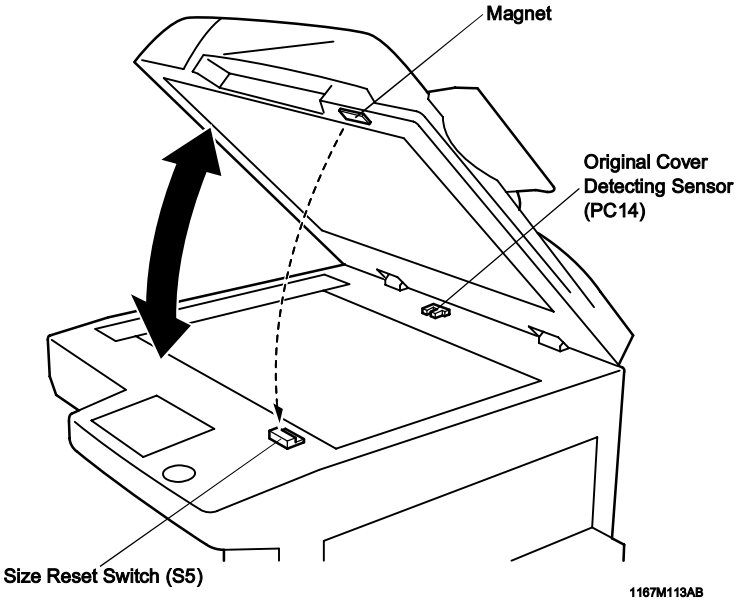
***NOTE***
*UN6, UN8 and UN9 are options.*

1170SBM1104A

## 11-4. Original Size Detection Timing

The copier CPU affirms and resets the readings of the original size at the following timings.

- Takes size readings:
  When the Original Cover Detecting Sensor is deactivated.
- Affirms size readings:
  When the Start key is pressed with the Original Cover Detecting Sensor activated or the Size Reset Switch deactuated.
- Resets size readings:
  When the Size Reset Switch is deactuated.




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| S5 | CN9BCR-2 | L | H |

| Electrical Component | Control Signal | Unblocked | Blocked |
|---|---|---|---|
| PC14 | CN10BCR-2 | L | H |

1170SBM1105A

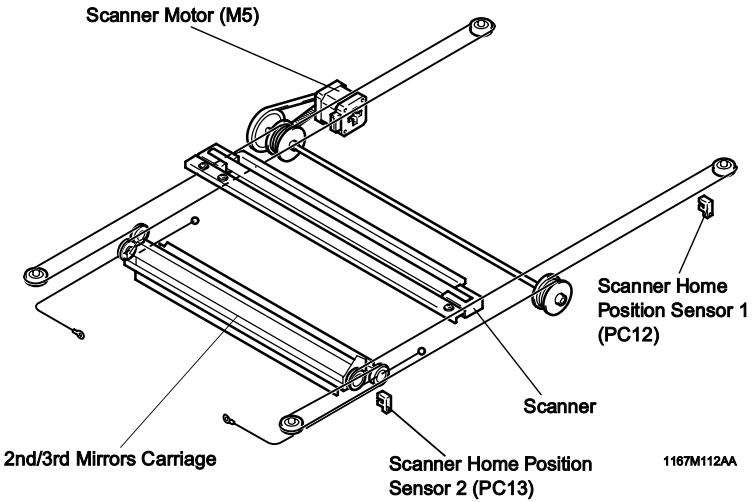
## 11-5. Scanner and 2nd/3rd Mirrors Carriage Moving Mechanism

<Scanner>

- During a scan, the Scanner projects an even amount of light from the Exposure Lamp onto the entire surface of the original. The light is reflected from the original to the 1st Mirror of the scanner and then to the 2nd and 3rd Mirrors.
- The Scanner is driven by the Scanner Motor and front and rear Scanner Drive Cables.
- Scanner speed is determined by the set zoom ratio in reference to the full size mode.
- The Scanner is at home position when Scanner Home Position Sensor 1 is blocked. This position serves as the reference for the scan motion.
- Scanner Home Position Sensor 2 determines the home position of the Scanner when AF-7 is used.

<2nd/3rd Mirrors Carriage>

- The 2nd and 3rd Mirrors are mounted to their holder at right angles to each other. They direct the light reflected off the 1st Mirror through the lens to the CCD.
- The 2nd/3rd Mirrors Carriage is also moved by the Scanner Drive Cables and pulleys driven by the Scanner Motor. It travels at a speed half that of the Scanner, thereby keeping constant the optical path length between the Original Glass and lens.



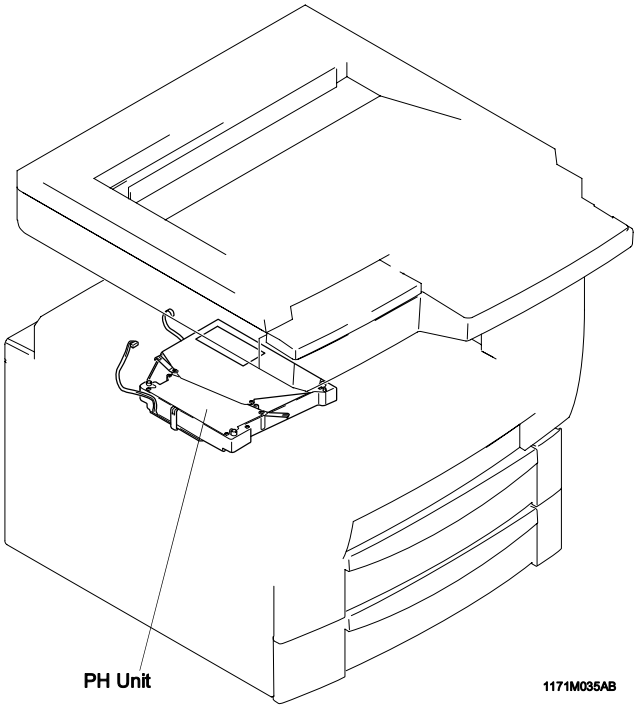

| Electrical Component | Control Signal | Forward Rotation | Backward Rotation |
|---|---|---|---|
| M5 | CN3BCR-1~3 | Pulse output | |

| Electrical Component | Control Signal | Blocked | Unblocked |
|---|---|---|---|
| PC12 | CN11BCR-1 | L | H |
| PC13 | CN12BCR-1 | L | H |

1170SBM1200A

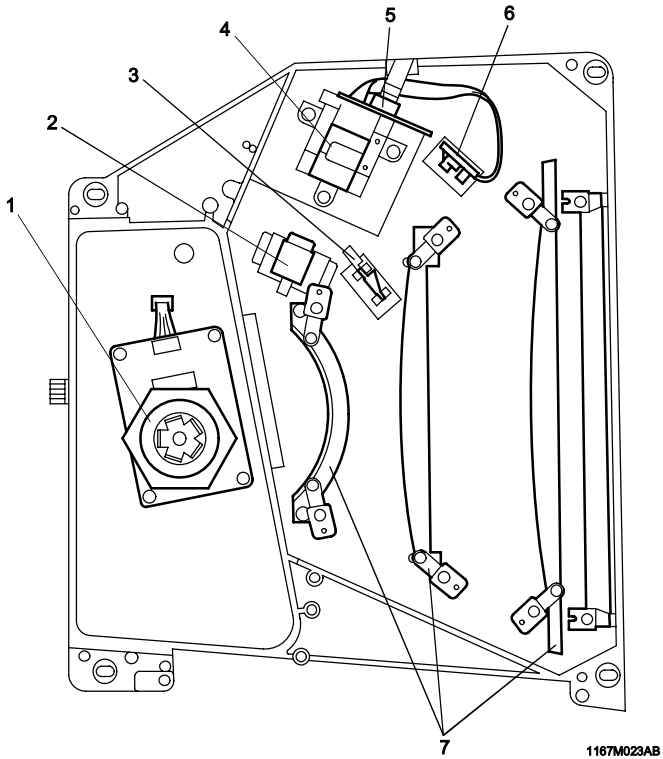
# 12 PH SECTION

- Based on the image data output from the MFB Board, the LD (laser diode) is activated and the corresponding light strikes the surface of the PC Drum.



1170SBM1201A

## 12-1. PH Components



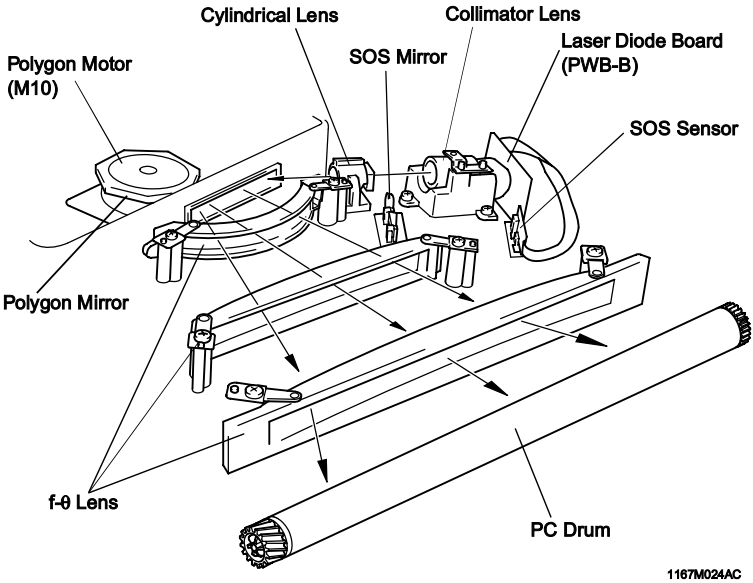

1. Polygon Motor (M10)
2. Cylindrical Lens
3. SOS Mirror
4. Collimator Lens
5. Laser Diode Board (PWB-B)
6. SOS Sensor
7. f-θ Lens

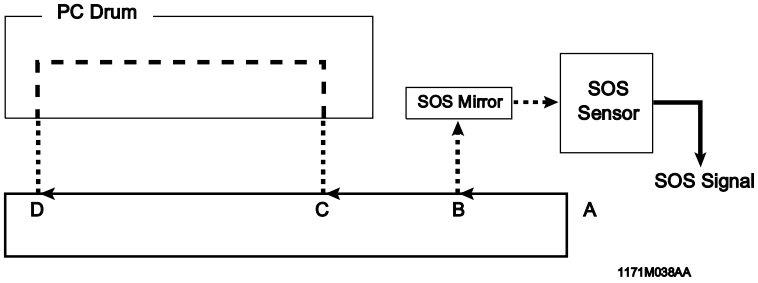
| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M10 | PJ8A-3 | L | H |

1170SBM1202A

## 12-2. Laser Emission Timing (SOS Signal)

- The signal output from the Master Board triggers the firing of the laser. The laser beam travels to the Polygon Mirror, lens, and SOS Mirror to eventually hit the SOS Sensor, which generates an SOS signal.
- The SOS signal determines the laser emission timing for each line in the main scanning direction.



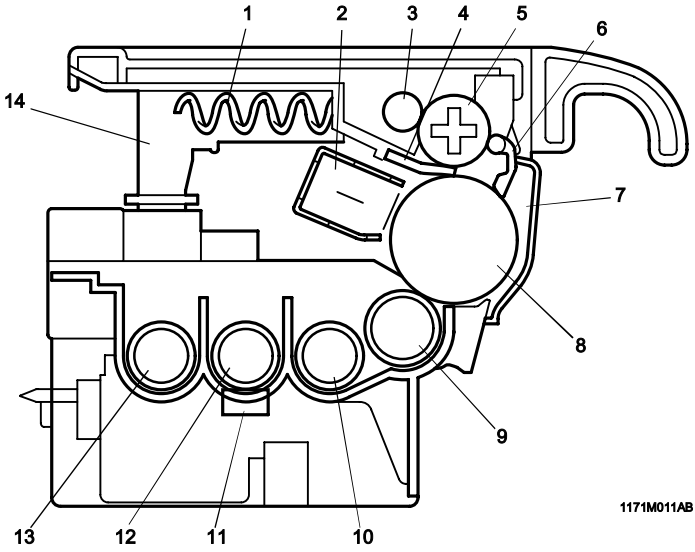




A to B: LD activation
B to C: LD OFF
C to D: Laser beam exposure area according to the image data

1170SBM1300A

# 13 DEVELOPING UNIT

- The Toner Conveying Rollers mix the toner and carrier particles together and carry the toner/carrier mixture up to the Sleeve/Magnet Roller. The magnetic brush formed on the surface of the roller allows the toner to come into contact with the charges on the surface of the PC Drum, thus forming an electrostatic latent image.




1. Spent Toner Recycling Coil
2. PC Drum Charge Corona
3. Spent Toner Feed Roller 2
4. Cleaning Blade
5. Spent Toner Feed Roller 1
6. PC Drum Paper Separator Finger
7. PC Drum Protective Shutter
8. PC Drum
9. Sleeve/Magnet Roller
10. 1st Toner Conveying Roller
11. ATDC Sensor (E1)
12. 2nd Toner Conveying Roller
13. 3rd Toner Conveying Roller
14. Spent Toner Recycling Duct

1170SBM1301A

## 13-1. Sleeve/Magnet Roller

- This copier employs the MT-HG system with a Sleeve/Magnet Roller having the following magnetic characteristics.
- Turning of the sleeve surrounding the Magnet Roller ensures that fresh developer from the Developer Mixing Chamber is always being conveyed to the point of development with respect to the PC Drum.

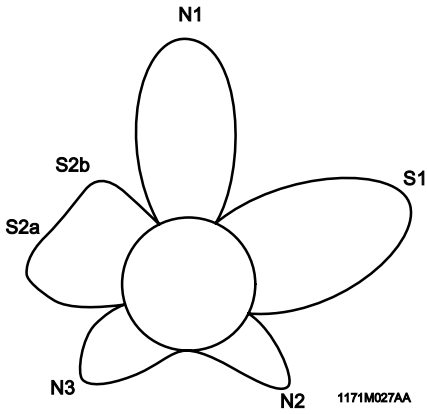
N1 : The point of development with the maximum magnetic flux density which ensures that the carrier is firmly held onto the Sleeve Roller when toner is attracted to the latent image.

S1, N2 : The magnetic flux density between these two poles is made low to ensure that the developer remaining on the surface of the Sleeve Roller is smoothly recycled. They also prevent developer from scattering.

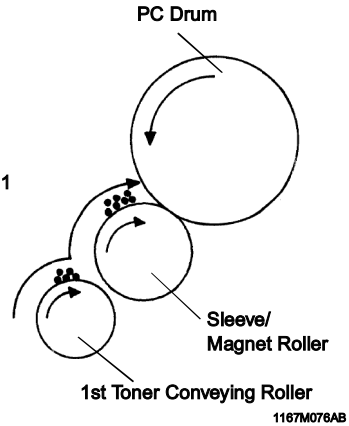
N3 : The developer brush is formed by this pole and its height is moderated before the brush is regulated by the Doctor Blade.

S2a : This pole ensures that the developer is conveyed to the point of development over the wide interval between N3 and N1.

S2b : If developer is compacted and clogs at the Doctor Blade and, as a result, part of the surface of the Sleeve/Magnet Roller is not covered with developer, the nearby developer around this pole with a weak magnetic force goes to those uncovered areas. This helps prevent white lines from occurring on the copy.



1171M027AA

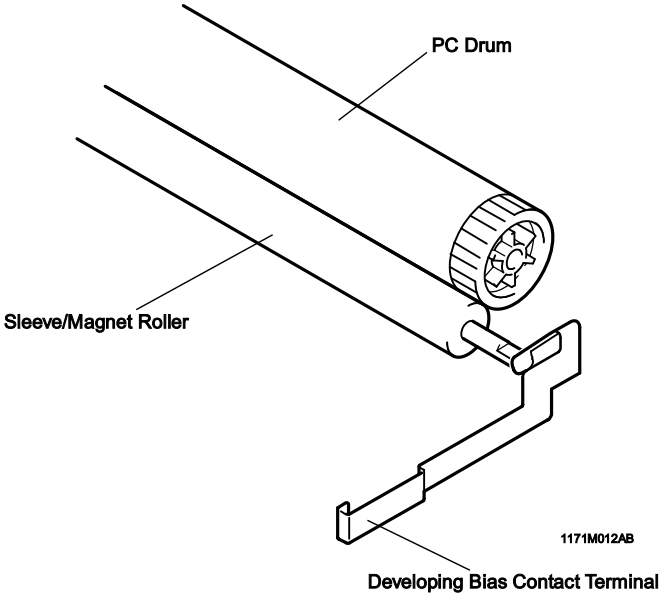


1167M076AB

1170SBM1302A

## 13-2. Developing Bias

- The amount of toner attracted onto the surface of the PC Drum is controlled by varying the developing bias voltage.
- As the PC Drum deteriorates and its photoconductive layer begins to wear, it becomes more sensitive to the increase in the amount of toner. As a countermeasure against this problem, the developing bias voltage is automatically switched according to the PC Drum temperature, thereby stabilizing the image quality level.




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| Vb | PJ14A-1A | L | H |

1170SBM1303A

## 13-3. ATDC Sensor

- The ATDC Sensor automatic adjustment is made when a new I/C is installed in the copier. Toner replenishing control is thereafter controlled as detailed in the following.

1. ATDC Sensor Automatic Adjustment

- The ATDC Sensor is automatically adjusted when a new I/C is loaded in the copier. During this sequence, the copier reads the sensor output value and sets it as the reference. This reference value is stored in memory and used until the I/C reaches its service life.

2. Toner Replenishing Control

- While the I/C Motor is turning, the ATDC Sensor samples T/C and, according to the readings, the copier provides the following controls.

| T/C Ratio (%) | Sampling Data (V) | Control Details |
|---|---|---|
| More than 19 | Less than 1.41 | Defective ATDC Sensor |
| 14 to 19 | 2.32 to 1.41 | Toner replenished for 0 msec. |
| 13 to 14 | 2.50 to 2.32 | Toner replenished for 54 msec. at intervals of approx. 1 sec. |
| 12 to 13 | 2.68 to 2.50 | Toner replenished for 150 msec. at intervals of approx. 1 sec. |
| 10 to 12 | 3.10 to 2.68 | Toner replenished for 378 msec. at intervals of approx. 500 msec. |
| 7 to 10 | 3.92 to 3.10 | Passed onto the T/C recovery mode. |
| Less than 7 | More than 3.92 | Defective ATDC Sensor |

✱ Toner replenishment represents the operation of the Sub Hopper Toner Replenishing Motor.

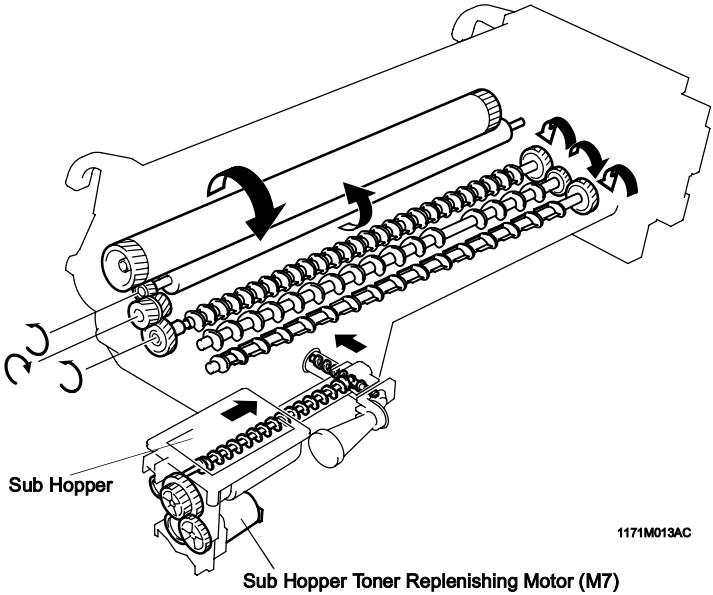
3. Toner Empty Control (T/C Recovery Mode)

- When the control is passed onto the T/C recovery mode, the Sub Hopper Toner Replenishing Motor is energized to replenish the supply of toner into the Developing Unit and, if T/C is recovered to a level of 14% or higher (2.32V or less) within 150 sec., it resets the toner-empty condition.

1170SBM1304A

## 13-4. Sub Hopper Toner Replenishing Mechanism

- Toner is replenished from the Sub Hopper to the Developing Unit by turning the Sub Hopper Toner Replenishing Motor for the period of time controlled by the ATDC output voltage (T/C).

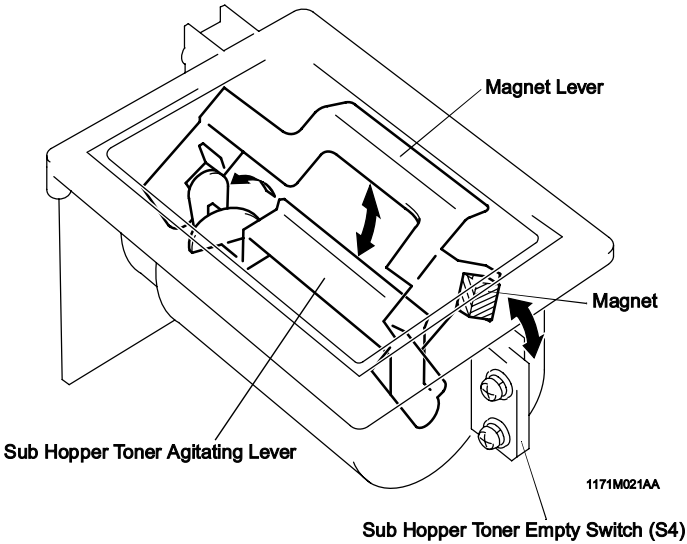



| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M7 | PJ11A-8A | DC24V | L |

1170SBM1305A

## 13-5. Sub Hopper Toner Empty Detecting Mechanism

- A toner-empty condition in the Sub Hopper is detected by the Magnet Lever that moves up and down as the Sub Hopper Toner Agitating Lever turns and actuates and deactuates the Sub Hopper Toner Empty Switch.
- While the amount of toner in the Sub Hopper is more than the predetermined amount, the Magnet Lever rests on the toner, keeping the Sub Hopper Toner Empty Switch deactuated even when the Sub Hopper Toner Agitating Lever turns. As toner is consumed, the Magnet Lever lowers to eventually actuate the Sub Hopper Toner Empty Switch, at which timing the copier detects a toner-empty condition in the Sub Hopper.

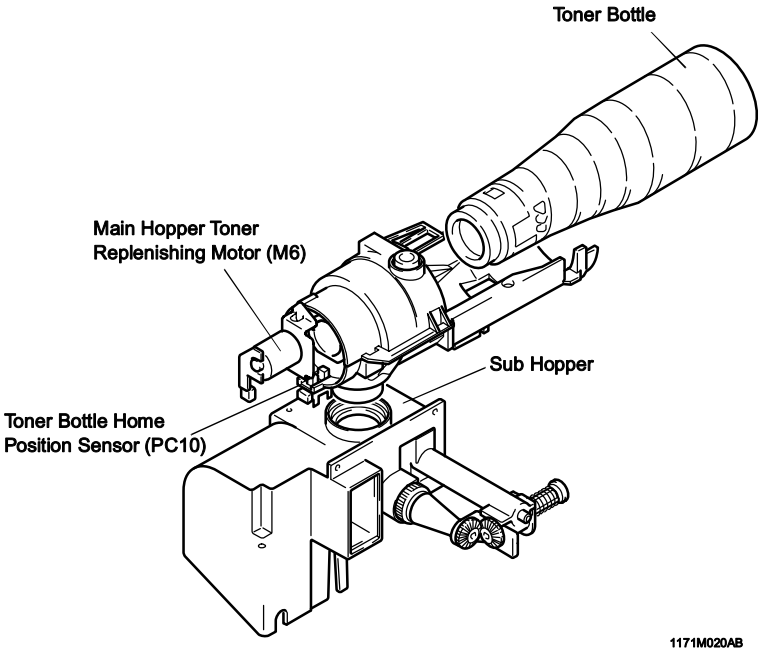



| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| S4 | PJ11A-7B | L | H |

1170SBM1306A

## 13-6. Main Hopper Toner Replenishing Mechanism

- When a toner-empty condition in the Sub Hopper is detected, the Main Hopper Toner Replenishing Motor is energized to turn the Toner Bottle, thereby supplying toner from the Main Hopper to the Sub Hopper.
- The Toner Bottle Home Position Sensor mounted on the coupling ensures that the Toner Supply Port in the Toner Bottle is positioned at the top whenever the bottle is stopped.
- The Toner Bottle Cover Sensor detects whether the Toner Bottle Cover is open. If the cover is open, the copier does not authorize the initiation of a new copy cycle. If the cover is opened during a copy cycle, the copier interrupts the cycle.

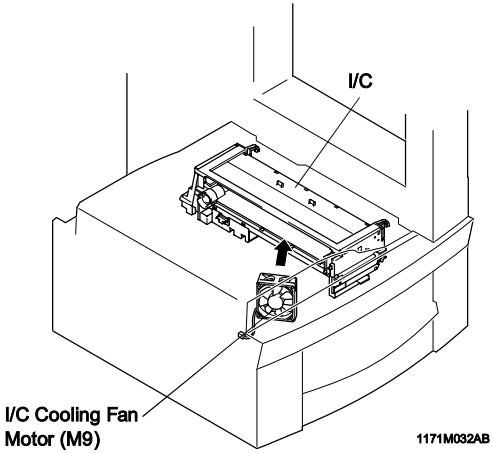



| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M6 | PJ11A-4A | DC24V | L |

| Electrical Component | Control Signal | Unblocked | Blocked |
|---|---|---|---|
| PC10 | PJ11A-2B | L | H |

1170SBM1307A
## 13-7. I/C Cooling Fan Motor

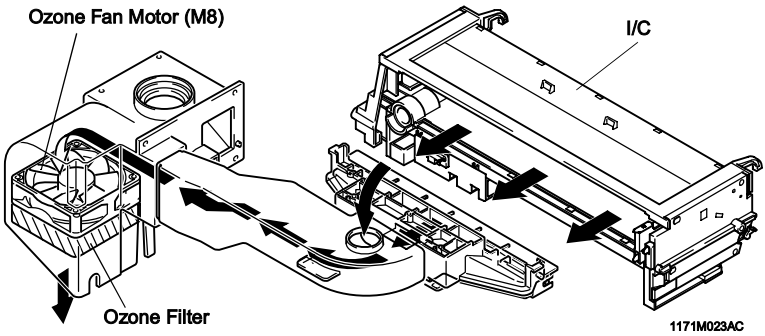
- The I/C Cooling Fan Motor prevents the temperature inside the copier (around the entire I/C) from rising inordinately.




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M9 | PJ18A-10 | DC24V | L |

1170SBM1308A
## 13-8. Ozone Fan Motor

- Ozone produced by the PC Drum Charge Corona is absorbed by the Ozone Filter from the air being drawn out of the copier by the Ozone Fan Motor.




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M8 | PJ11A-1A | DC24V | L |

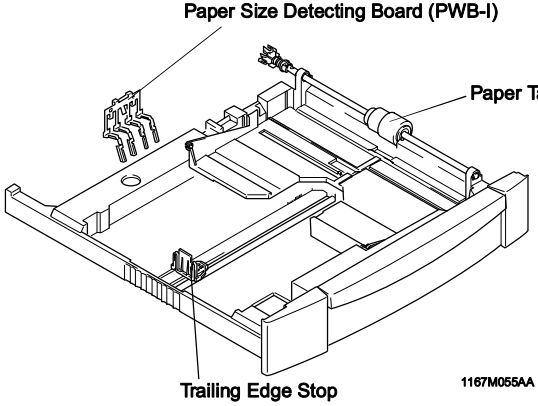
1170SBM1400A

# 14 PAPER TAKE-UP/FEED SECTION

*NOTE*

- For the details of the 2nd Cassette (500-Sheet Cassette), see the relevant option service manual.

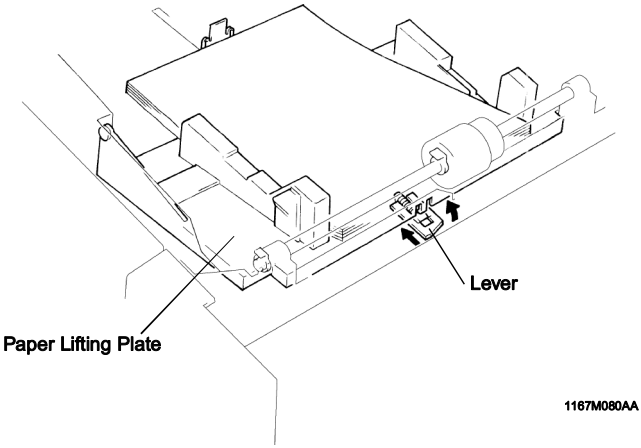
- This copier employs the Multi-Purpose (MP) Cassette whose capacity is about 250 sheets (about 20 sheets for special paper).




1170SBM1401A

## 14-1. MP Cassette Paper Lifting Plate

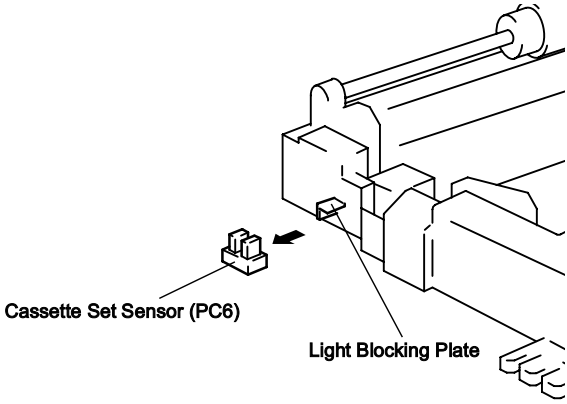
- The Paper Lifting Plate installed in the MP Cassette is spring-loaded to push the paper stack upward. When the cassette is slid into the copier, the lever located on the bottom of the cassette and used to lock down the Paper Lifting Plate is pushed and unlocked, allowing the Paper Lifting Plate to push the paper stack upward.



1170SBM1402A

## 14-2. MP Cassette-in-Position Detection

- When the MP Cassette is slid into the copier, the light blocking plate located in the rear of the cassette blocks the Cassette Set Sensor and the copier determines that the MP Cassette has been slid into position.




1167M052AB

| Electrical Component | Control Signal | Unblocked | Blocked |
|---|---|---|---|
| PC6 | PJ13A-5B | H | L |

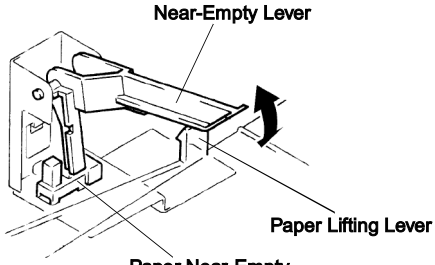
1170SBM1403A

## 14-3. MP Cassette Paper Empty Detection

- Two sensors are used in this copier: the Paper Empty Sensor detects a paper-empty condition, while the Paper Near-Empty Sensor detects a paper near-empty condition.

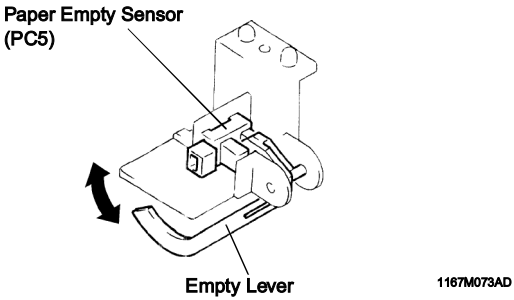
Paper Near-Empty Detection:

- A paper near-empty condition is detected as the paper is consumed and when the Near-Empty Lever lowers to eventually block the sensor (L).
- At this time, the MP Cassette Paper Empty LED starts blinking.
- A paper-empty condition results when about 50 more sheets of paper are used after the near-empty condition has been detected.




Paper Empty Detection:

- A paper-empty condition is detected as the paper is consumed and when the Empty Lever lowers to eventually block the sensor (L).
- At this time, the MP Cassette Paper Empty LED lights up steadily.



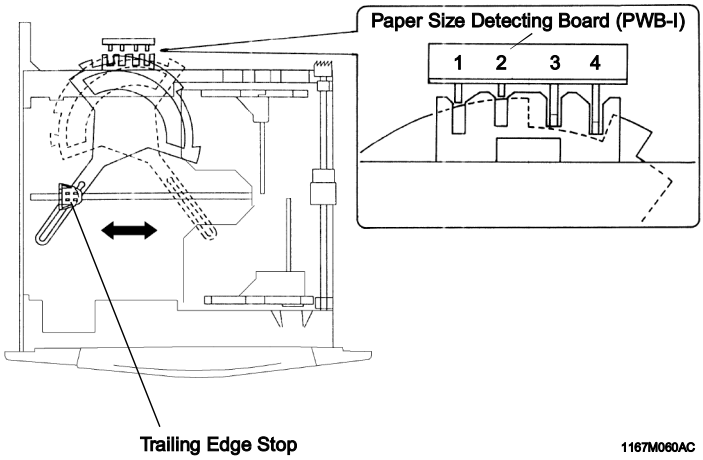

| Electrical Component | Control Signal | Unblocked | Blocked |
|---|---|---|---|
| PC4 | PJ14A-13A | H | L |
| PC5 | PJ13A-2B | H | L |

1170SBM1404A

## 14-4. MP Cassette Paper Size Detection

- The Paper Size Detecting Board detects the length of the paper (FD).
- A lever is connected to the Trailing Edge Stop of the cassette and, as the stop is slid to the size of the paper loaded in the cassette, the lever is moved to turn ON and OFF the size detecting switches mounted on the copier side.
- The control panel settings are necessary for any paper size other than the following.

| Paper Size Detecting Switches (PWB-I) | | | | Paper Size |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | |
| ON | OFF | OFF | OFF | A3L, 11"×17"L |
| OFF | OFF | OFF | OFF | B4L, 8-1/2"×14"L |
| OFF | ON | ON | ON | A4L |
| ON | ON | ON | ON | B5L, 8-1/2"×11"L |
| ON | ON | OFF | OFF | A4C/A5L |
| ON | OFF | OFF | ON | B5C |
| OFF | ON | OFF | OFF | A5C |
| ON | ON | ON | OFF | 8-1/2"×11"C |

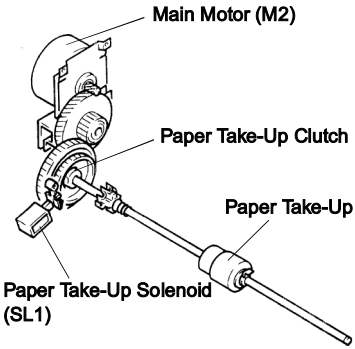



| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| PWB-I (1) | PJ14A-1B | L | H |
| PWB-I (2) | PJ14A-2B | L | H |
| PWB-I (3) | PJ14A-3B | L | H |
| PWB-I (4) | PJ14A-4B | L | H |

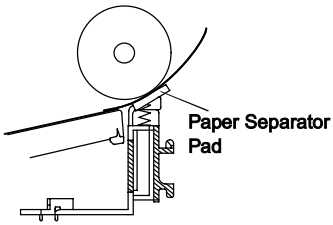
1170SBM1405A

## 14-5. Paper Take-Up Mechanism

- Drive from the Main Motor is transmitted to the Paper Take-Up Clutch (spring clutch) and, by energizing the Paper Take-Up Solenoid, the Paper Take-Up Roll is turned.
- The paper separating mechanism employs a Paper Separator Pad.




1167M038AB



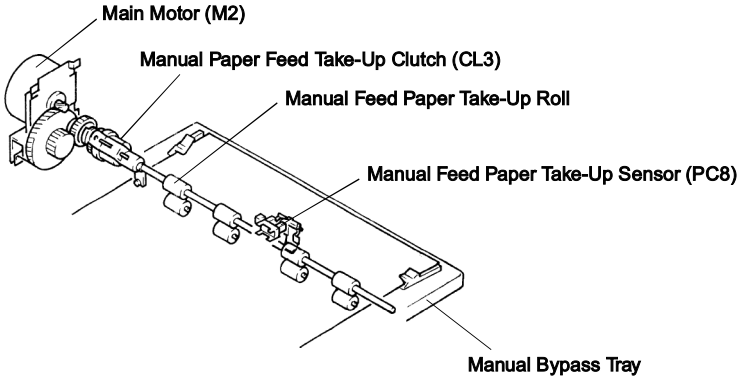

1167M054AB

1170SBM1406A

## 14-6. Manual Bypass Tray

1. Construction of the Manual Bypass Tray

- Drive from the Main Motor is transmitted to the Manual Paper Feed Take-Up Clutch and, by energizing this clutch, the Manual Feed Paper Take-Up Roll is turned.


Main Motor (M2)
Manual Paper Feed Take-Up Clutch (CL3)
Manual Feed Paper Take-Up Roll
Manual Feed Paper Take-Up Sensor (PC8)
Manual Bypass Tray

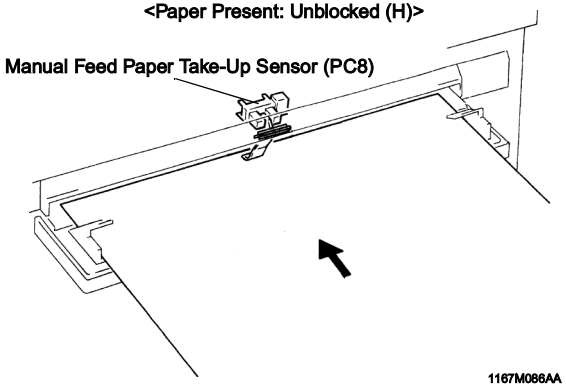
1167M067AC

| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M2 | PJ16A-1 | L | H |
| SL1 | PJ13A-13B | L | H |
| CL3 | PJ4A-9A | L | H |

2. Manual Feed Paper Take-Up Detection

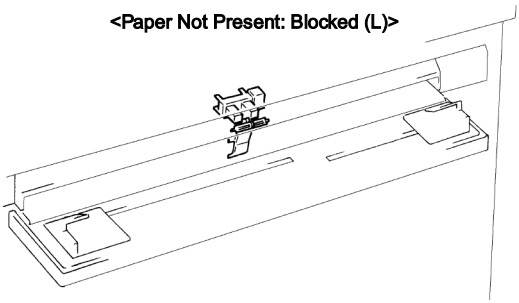
- The Manual Feed Paper Take-Up Sensor detects a sheet of paper that is fed via the Manual Bypass Tray.
- The size and type of the paper for manual feed are set on the control panel.

<Paper Present: Unblocked (H)>




1167M086AA

<Paper Not Present: Blocked (L)>



1167M085AA

| Electrical Component | Control Signal | Unblocked | Blocked |
|---|---|---|---|
| PC8 | PJ4A-7B | H | L |

1170SBM1407A

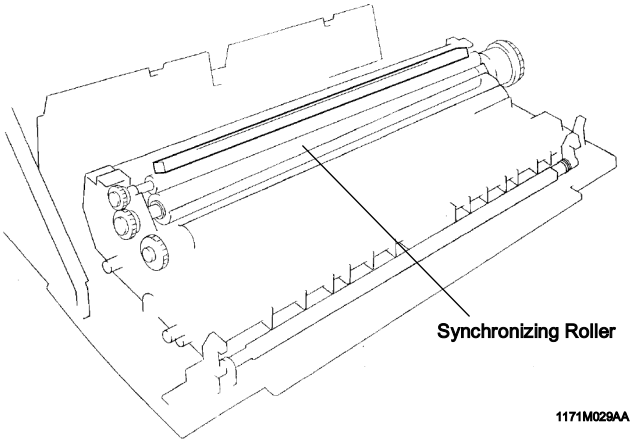
## 14-7. Paper Take-Up Retry Mechanism

- To minimize the occurrence of a paper misfeed due to a slippery Paper Take-Up Roll, the Paper Take-Up Solenoid is energized a second time if a sheet of paper fails to reach the Synchronizing Roller Sensor within a given period of time after the solenoid has been energized first.
- A paper take-up misfeed results if the sheet of paper does not reach the Synchronizing Roller Sensor even after two paper take-up sequences.

1170SBM1500A

# 15 SYNCHRONIZING ROLLERS

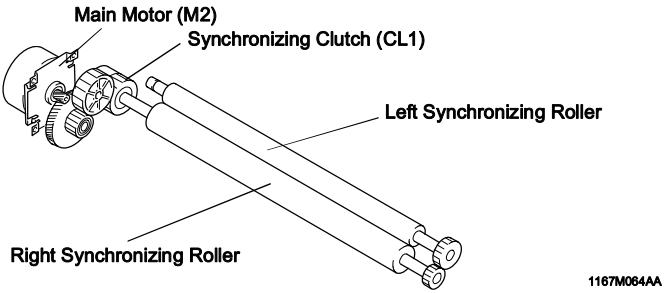
- The Synchronizing Rollers of this copier are located inside the Right Door. They are easily accessible for misfeed clearing by just opening the Right Door.




1170SBM1501A

## 15-1. Synchronizing Roller Drive Mechanism/Control

- The Synchronizing Rollers are turned by the drive from the Main Motor transmitted to the Synchronizing Clutch.
- The rollers are started when the Synchronizing Clutch is deenergized.

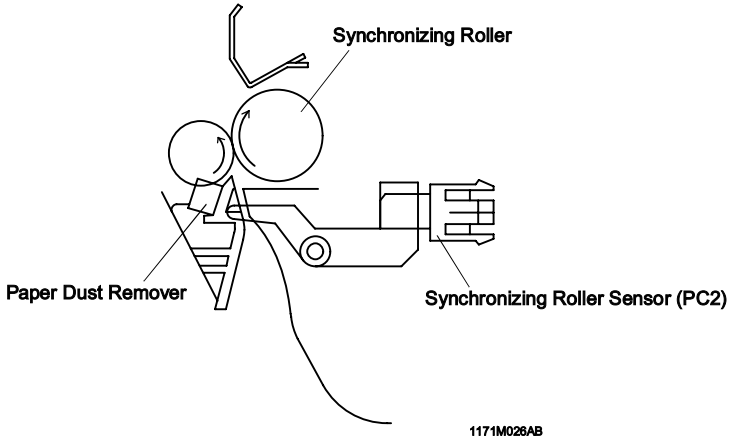



| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M2 | PJ16A-1 | L | H |
| CL1 | PJ13A-2A | L | H |

1170SBM1502A

## 15-2. Paper Dust Remover

- The Paper Dust Remover is installed so that it makes contact with the Left Synchronizing Roller. It is intended for preventing paper dust from sticking to the surface of the PC Drum.
- As the roller turns in contact with the Paper Dust Remover, triboelectric charging occurs, which attracts paper dust from the paper that passes between the two rollers and the dust is, in turn, transferred onto the Paper Dust Remover.



1170SBM1600A

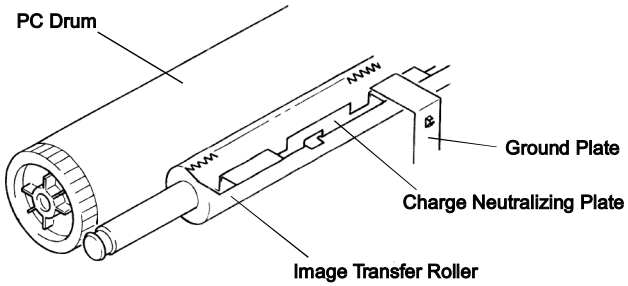
# 16 IMAGE TRANSFER AND PAPER SEPARATION

Image Transfer

- This copier employs an Image Transfer Roller to transfer the image to the paper. The High Voltage Unit applies an image transfer current to this roller. To ensure that image transfer efficiency is stabilized, the image transfer current is automatically varied according to the paper size, paper type, and the B/W ratio of the original.
- To prevent toner from sticking to the Image Transfer Roller, an image transfer voltage of -975V is applied to the roller for cleaning.

Paper Separation

- To neutralize any charge left on the paper, to which the image has been transferred, the High Voltage Unit applies a voltage of -1200V via a ground plate to the Charge Neutralizing Plate.

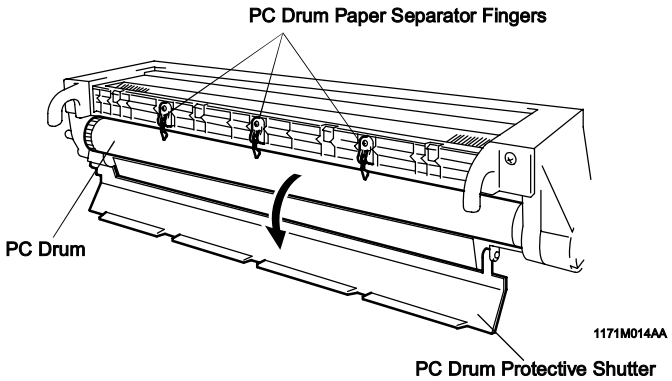


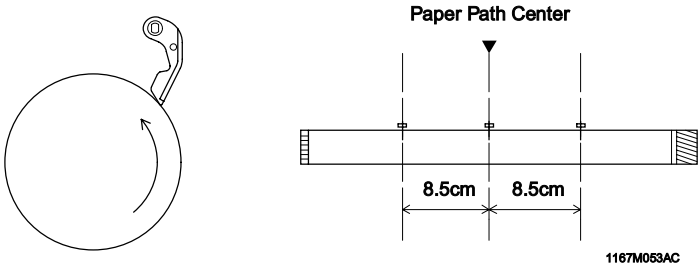

1167M082AA

| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| Image transfer output | PJ14A-2A | L | H |

# 17 PC DRUM PAPER SEPARATOR FINGERS

- The three PC Drum Paper Separator Fingers fitted to the I/C mechanically separate paper from the surface of the PC Drum to ensure good and positive paper separation.

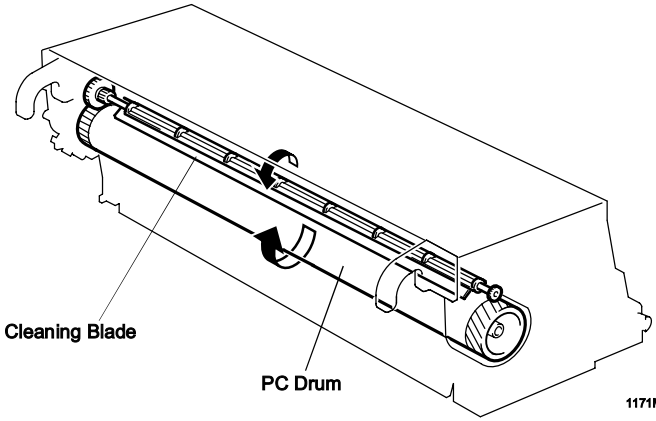


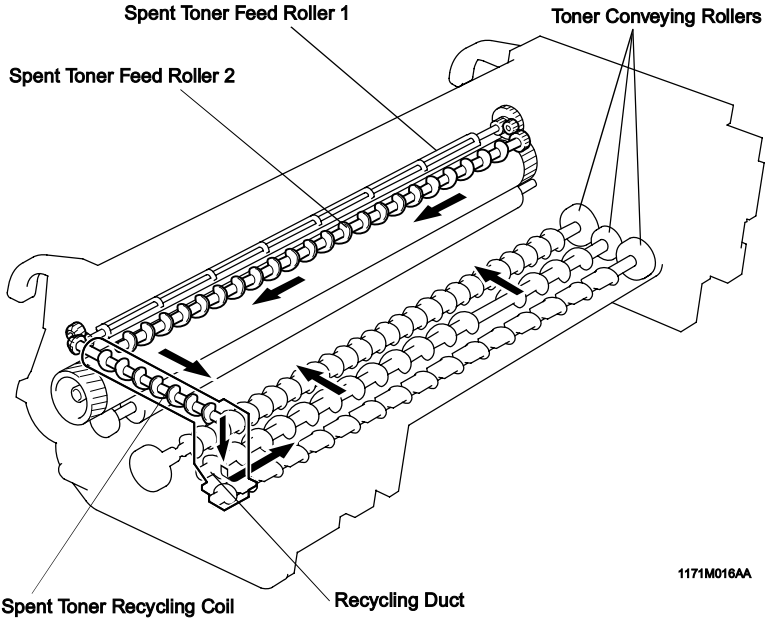
1170SBM1800A

# 18 PC DRUM CLEANING

- This copier employs a spent toner recycling mechanism. The Cleaning Blade which is held pressed against the surface of the PC Drum scrapes residual toner off the surface. The waste toner is conveyed by Spent Toner Feed Roller 1 and 2 to the Spent Toner Recycling Duct and eventually back to the Developer Mixing Chamber.



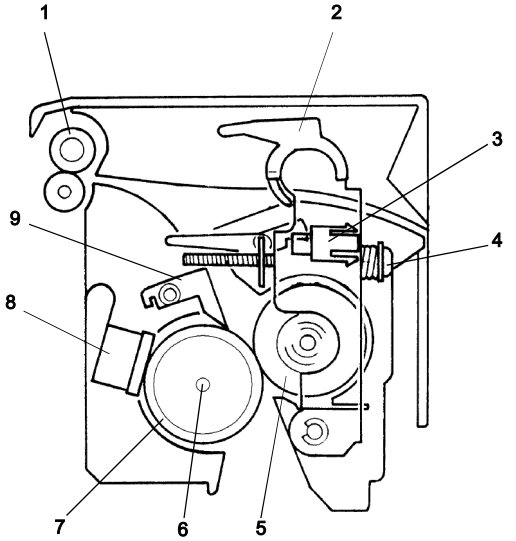

1171M015AA




1171M016AA

# 19 FUSING UNIT

- The paper, to which the developed image is yet to be fixed, is fed through heated Left and Right Fusing Rollers. The heat and pressure applied at this time fixes the image permanently to the paper.

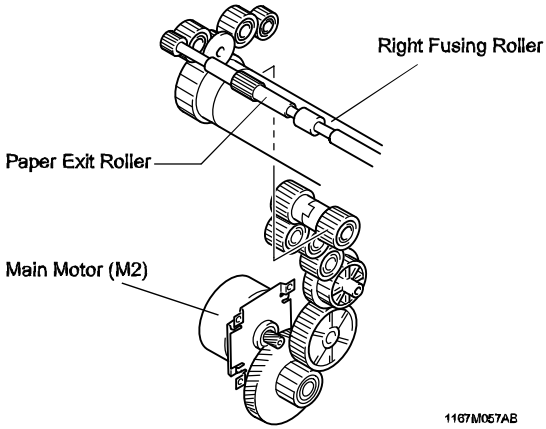



1167M078AB

1. Paper Exit Roller
2. Fusing Misfeed Clearing Lever
3. Paper Exit Sensor (PC3)
4. Pressure Spring
5. Right Fusing Roller
6. Fusing Roller Heater Lamp (H1)
7. Left Fusing Roller
8. Fusing Roller Thermostat (TS1)
9. Fusing Paper Separator Finger

1170SBM1901A
## 19-1. Drive Mechanism

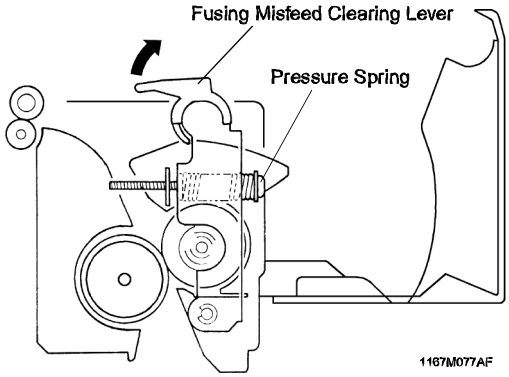
- Drive from the Main Motor is transmitted via a gear train to the Right Fusing Roller.




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M2 | PJ16A-1 | L | H |

1170SBM1902A
## 19-2. Fusing Rollers Pressure Mechanism

- To ensure that there is a certain width of area of contact between the Left and Right Fusing Rollers, pressure springs are installed.
- The rollers are held pressed against each other at all times and they are released only when servicing the copier or replacing parts.
- The pressure between the two rollers is approx. 12 kg.
- The rollers can be released by moving the Fusing Misfeed Clearing Lever in the direction of the arrow.

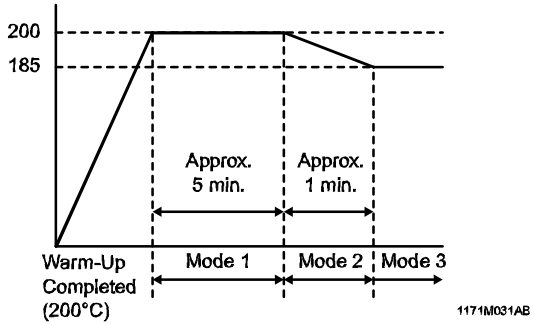


1170SBM1903A

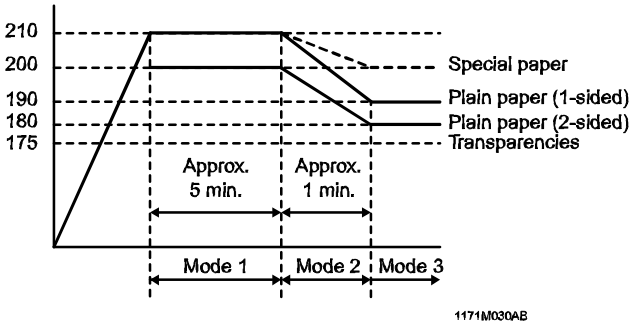
## 19-3. Fusing Temperature Control

- The Fusing Roller Heater Lamp inside the Left Fusing Roller provides the following temperature control.

- Temperature Control During Standby State -




- Temperature Control During a Copy Cycle -




<Temperature Control>

- The Fusing Roller Thermistor detects the surface temperature of the Left Fusing Roller. It provides an analog voltage input to the Master Board allowing the copier to control the fusing temperature.

| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| H1 | PJ16A-8 | L | H |

| Electrical Component | Control Signal | Low Temp. ↔ High Temp. |
|---|---|---|
| TH1 | PJ16A-5 | Analog input |

<Temperature Control by Mode>

- The mode that is initiated following the completion of a warm-up cycle varies as detailed below depending on the machine condition and the Fusing Roller temperature at the restart of temperature control.

| Machine Condition | Fusing Roller Temperature | |
|---|---|---|
| | Less than 100°C | 100°C or higher |
| Power is turned ON. | Mode 1 | Mode 2 |
| Temperature control is interrupted during warm-up. | | Mode 1 |
| Temperature control is interrupted during mode 1. | | |
| Temperature control is interrupted during mode 2. | | Mode 2 |
| Temperature control is interrupted during mode 3. | | |

1170SBM1904A

## 19-4. CPM Control

- As a measure to prevent the temperature on the edges of the Fusing Rollers (over which no part of paper passes) from rising in a multi-copy cycle using small size paper (width of 250 mm or less), the paper feed interval is made greater.

<Control>

- If a sheet of small size paper is taken up and fed in during mode 1, control is switched to mode 2.
- The number of sheets of small size paper that are fed through is counted.

<Timing>

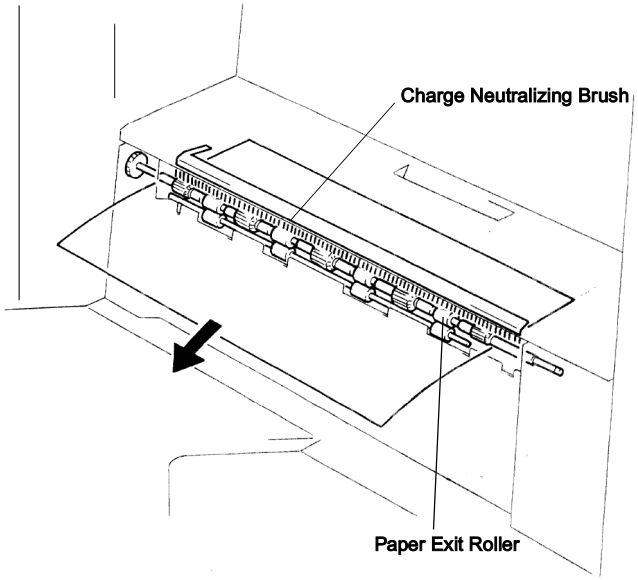
- The counter reaches 30.
- The plain/special paper counter reaches N specified below:
  If the control is in mode 1 or mode 2 when the counter starts counting, N = 30.
  If the control is in mode 3 when the counter starts counting, N = 100.

<Resetting>

- If a period of 2 min. or more elapses, during which the counter does not count up after the counter has started counting, the counter is cleared resetting the CPM control.

# 20 PAPER EXIT UNIT

- The Paper Exit Roller feeds the paper, to which the developed image has been fixed, out of the copier. The Charge Neutralizing Brush touches the surface of the sheet of paper being fed out of the Fusing Unit to neutralize any static charge left on it. This effectively prevents two sheets of paper fed out of the copier from sticking to each other due to static charge.

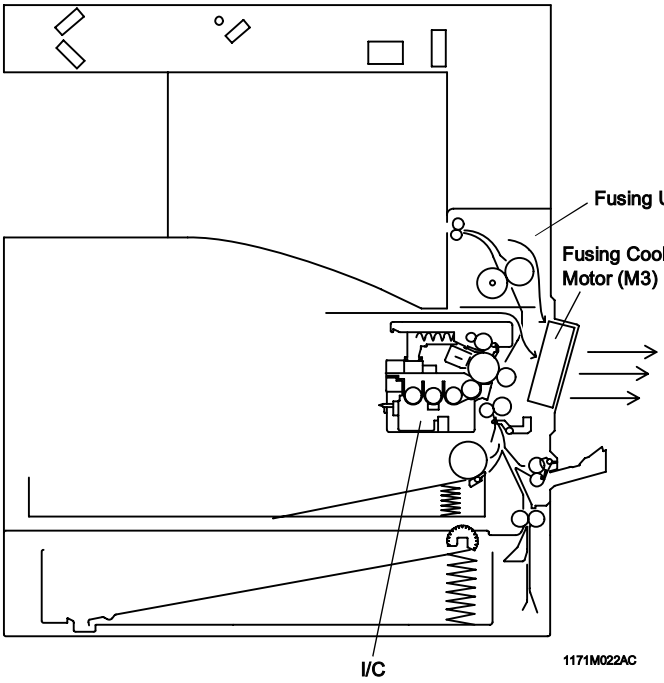



1167M061AC

1170SBM2100A

# 21 FUSING COOLING FAN MOTOR

- The Fusing Cooling Fan Motor located in the Right Door prevents the temperature of the Fusing Unit Cover and the area above the I/C from rising inordinately. The motor also draws the paper after it has been separated from the PC Drum onto the transport guide to ensure that it is stably and smoothly fed into the Fusing Unit.

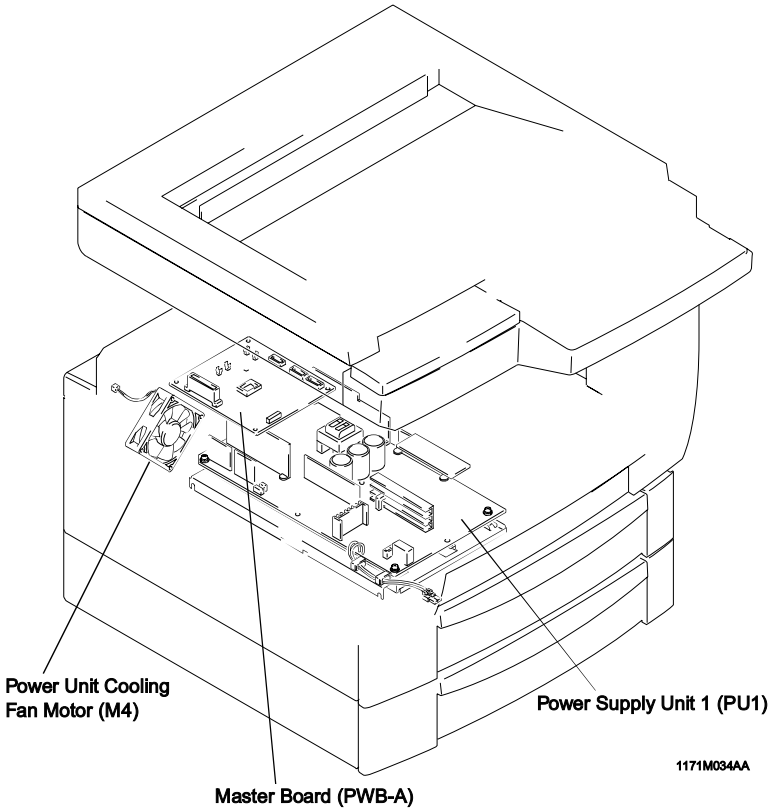



| Electrical Component | Control Signal | During Copy Cycle | In Standby | During Warm-Up |
|---|---|---|---|---|
| | | Full speed | Half speed | Stop |
| M3 | PJ13A-3A | Pulse output | | L |

1170SBM2200A

# 22 POWER UNIT COOLING FAN MOTOR

- The Power Unit Cooling Fan Motor prevents the temperature at the Power Supply Unit and the Polygon Motor in the PH from rising inordinately.




| Electrical Component | Control Signal | While Main Motor is Turning | In Standby |
|---|---|---|---|
| | | Full speed | Half speed |
| M4 | PJ6A-2 | DC24V | DC10V |

# Di250

# SWITCHES ON PWBs, TECH. REP. SETTINGS

MINOLTA

17196

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# 1 PRECAUTIONS FOR HANDLING THE PWBs

## 1-1. Precautions for Transportation and Storage

- Before transporting or storing the PWBs, put them in protective conductive cases or bags so that they are not subjected to high temperature and are not exposed to direct sunlight.
- Protect the PWBs from any external force so that they are not bent or damaged.
- Once the PWB has been removed from its conductive case or bag, never place it directly on an object that is easily charged with static electricity (such as a carpet or plastic bag).
- Do not touch the parts and printed patterns on the PWBs with bare hands.

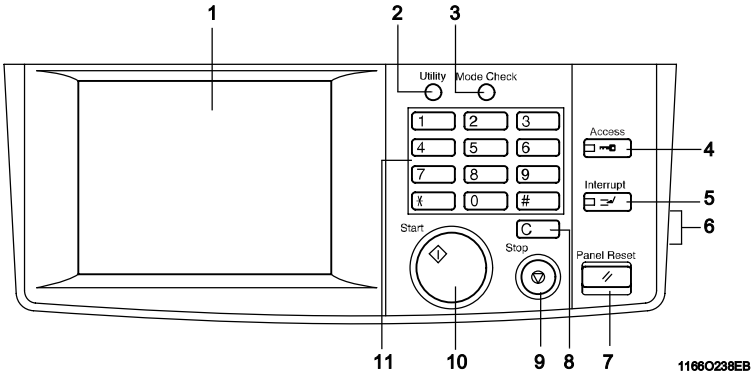
## 1-2. Precautions for Replacement and Inspection

- Whenever replacing the PWB, make sure that the power cord of the copier has been unplugged.
- When the power is on, the connectors should never be plugged in or unplugged.
- Use care not to strap the pins of an IC with a metal tool.
- When touching the PWB, wear a wrist strap and connect its cord to a securely grounded place whenever possible. If you cannot wear a wrist strap, touch the metal part to discharge static electricity before touching the PWB.

# 2 CONTROL PANEL KEYS AND TOUCH PANEL

✱ For more details, see the Operator's Manual shipped with the copier.

## 2-1. Control Panel Keys




1. Touch Panel
- Shows various screens and messages.

2. Utility Key
- Press to show the User Mode menu.

3. Mode Check Key
- Shows the Mode Check screen on which the user can check the current copying settings.

4. Access Mode Key
- Used to enter the access number. After the access number has been entered, pressing this key will allow the user to make copies.

5. Interrupt Key
- Sets the copier into, or lets it leave, the Interrupt mode.

6. Display Contrast Knob
- Turn to vary the brightness of the Touch Panel.

7. Panel Reset Key
- Clears all settings made on the control panel, setting the copier back into the initial mode.
- Cancels currently reserved jobs.

✱ It does not clear the zoom ratios and job settings stored in memory and Interrupt mode.

8. Clear Key
- Clears the number-of-copies setting, zoom ratio, and counter count.
- Cancels the image data read.

9. Stop Key
- Press to stop a scanning cycle.
- Press to stop a print cycle.

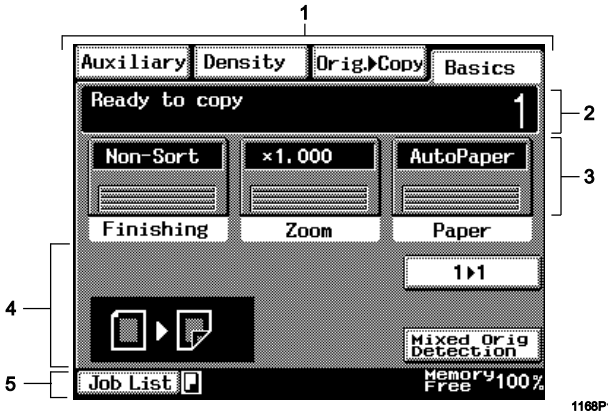
10. Start Key
- Press to start the document scanning sequence.
- Press to start a print cycle.

11. 10-key Pad
- Numeric key pad used for entering the number of copies to be made, zoom ratio, access number, and the Tech. Rep. mode settings.

## 2-2. Explanation of the Touch Panel

### (1) Basic Screen

- The Basic screen is the initial screen that appears when the copier panel is reset or auto reset is activated.




1168P169CC

1. Supplementary Function Key
- Selects the corresponding menu screen, either Auxiliary, Density, Orig. ▶ Copy, or Basics.

2. Message Display
- Shows the current copier status, operating instructions, caution/warning messages, and other data including the number of copies selected.

3. Basic Function Keys
- Allows the user to select the finishing, zoom ratio, and copy paper.

4. Function Display
- Shows graphic representations of the settings currently made for Orig. ▶ Copy and Finishing.

5. Status Display
- Shows what is being done with the current job and other data.

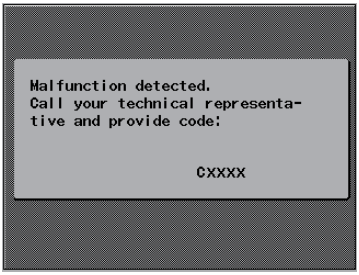
### (2) Warning Screens

- The warning screen may be a malfunction display, error display, warning display, or a caution display.

<Malfunction Display>

- A malfunction display is given when trouble occurs which cannot be corrected by the user.

Example: Malfunctions that can be identified with a specific code.

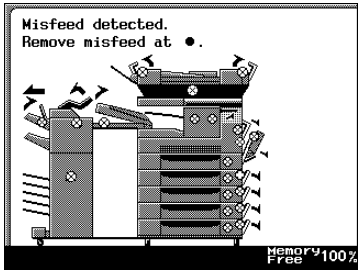



1171S001CB

<Error Display>

- An error display is given when trouble occurs which can be corrected by the user.

Example: Paper misfeed, toner empty, door open.

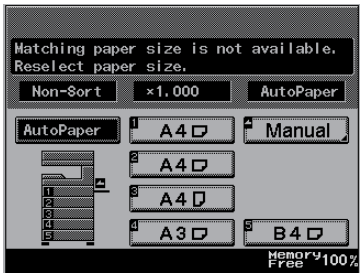



1168P167CD

<Warning Display>

- A warning display is given when any further copier operation will not be possible, or only a defective copy will be produced, because of erroneous or illegal panel settings or other cause.

Example: Unmatched paper size in Auto Paper.

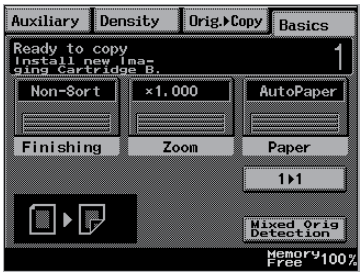



1171S002CC

<Caution Display>

- A caution display is given when, though further copier operation will be possible, it could result in a malfunction.

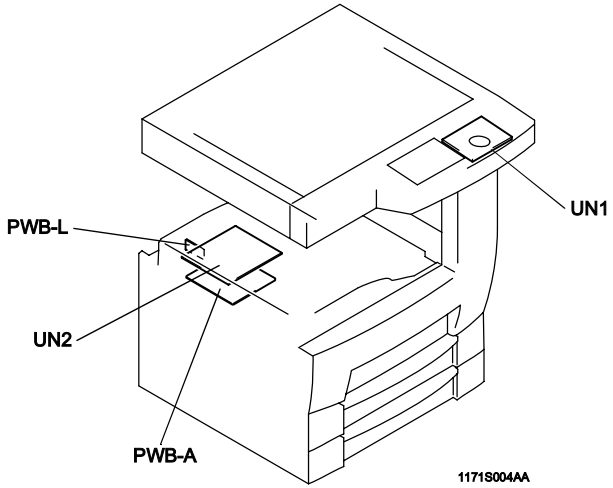
Example: Install new Imaging Cartridge.



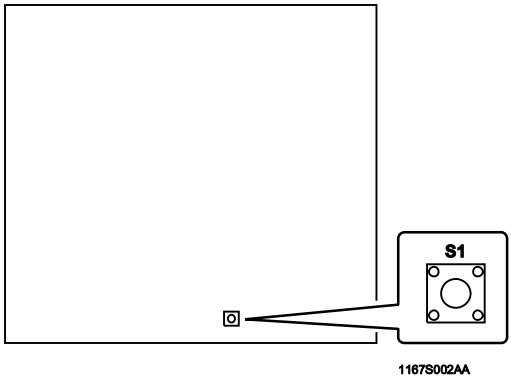

1171S003CB

# 3 FUNCTION OF SWITCHES AND OTHER PARTS ON PWBs

## 3-1. PWB Location

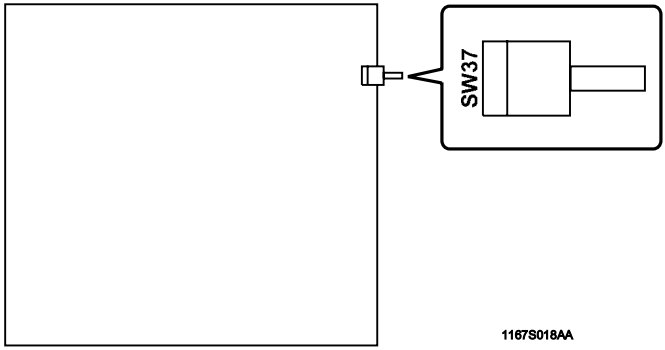



## 3-2. PWB-A (Master Board)



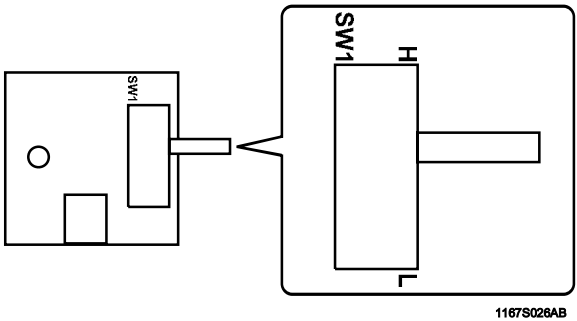

| Symbol | Name | Description |
|---|---|---|
| S1 | Test Print Switch | Used to run a test print cycle. |

## 3-3. UN1 (Control Panel)



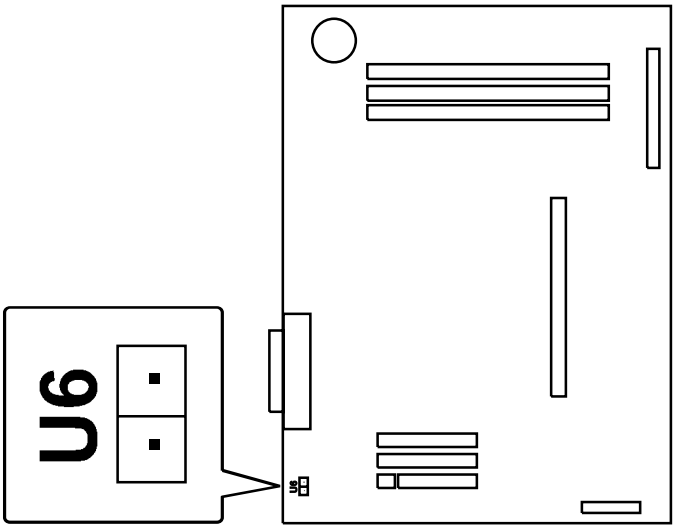

| Symbol | Name | Description |
|---|---|---|
| SW37 | Warm Restart Switch | • Used to enter the initial mode.<br>• Used to restart the copier after a breakdown. |

## 3-4. PWB-L (PPM Switching Board)




| Symbol | Name | Description |
|---|---|---|
| S1 | Low-Speed Mode Selecting Switch | Used to make longer the paper-to-paper intervals as a means of preventing the problem in which sheets of paper are fed out untidily when large size paper left to stand under high humidity condition is being used.<br>✱ Keep this switch in the H position, as it is only for special users. |

## 3-5. UN2 (MFB Board)




| Symbol | Name | Description |
|---|---|---|
| U6 | Forced Memory Clear | Used when it is not possible to clear RAM by warm restart. |

* Be careful about using these pins, as closing these pins clears all data including counter data.

<Clearing Procedure>

1. Turn OFF the Power Switch.
2. Remove the Upper Cover and MFB Box Cover.
3. Close U6 and, in that condition, turn ON the Power Switch.

---

*NOTE*

*Use care not to close any other circuit.*

---

4. When the initial screen appears, turn the Power Switch OFF.
5. Open U6.

---

*NOTE*

*When Forced RAM Clear has been performed, make these adjustments and settings once again in this order:*

*1. "Marketing Area" of "Initial mode"*

*2. "Memory Clear" of "Initial mode"*

*3. Other adjustments and settings as necessary*

---

<Data/Conditions Cleared by Reset Switches/Pins>

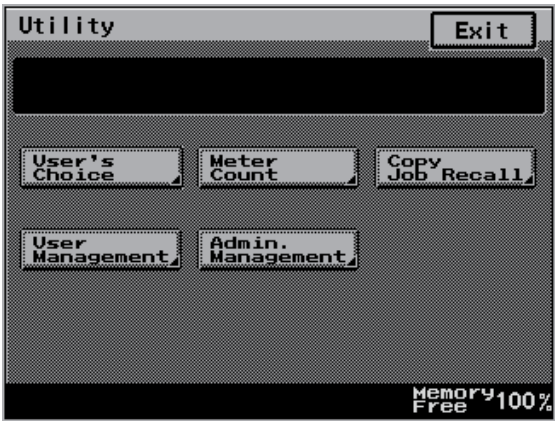
| Switches/Pins / Data/Conditions Cleared | Power Switch OFF/ON | Side Cover open/ close | Initial Mode | | | Forced RAM Clear |
|---|---|---|---|---|---|---|
| | | | Memory Clear | Total Clear | Trouble Reset | |
| Misfeed display | ❍ | ❍ | ❍ | — | ❍ | ❍ |
| Malfunction display (other than Fusing) | ❍ | ❍ | ❍ | — | — | ❍ |
| Malfunction display (all including Fusing) | — | — | ❍ | — | ❍ | ❍ |
| Erratic operation/ display | — | — | ❍ | — | ❍ | ❍ |
| User's Choice | — | — | ❍ | — | — | ❍ |
| Tech. Rep. Mode | — | — | ❍ | — | — | ❍ |
| Counter | — | — | — | ❍ | — | ❍ |
| RD Mode | — | — | — | ❍ | — | ❍ |
| Security Mode | — | — | ❍ | — | — | ❍ |
| Adjust Mode | — | — | — | — | — | ❍ |

❍: Cleared (initialized) —: Not cleared

# 4 USER'S CHOICE MODE

- The User's Choice mode is used to make various settings according to the user's needs.

## 4-1. User's Choice Selection Screen

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## 4-2. User's Choice Function Setting Procedure

<Setting Procedure>

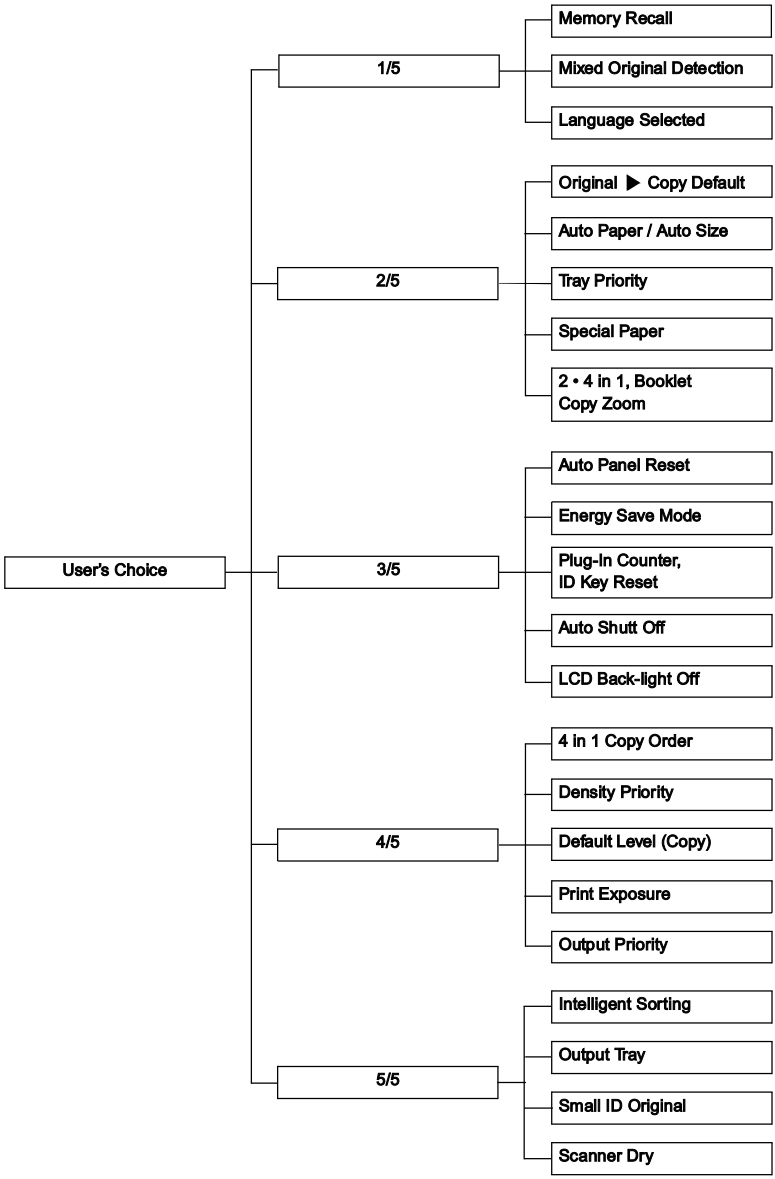
1. Press the Utility key on the control panel and then touch the "User's Choice" key.
2. Select the page number key that contains the desired function from among 1/5 through 5/5 shown at the bottom of the Touch Panel.
3. Select the function to be set and make settings as required.
4. After the settings are complete, touch the "Enter" key to validate the settings.

✱ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the screen to go back to the Basic screen.

## 4-3. User's Choice Function Tree



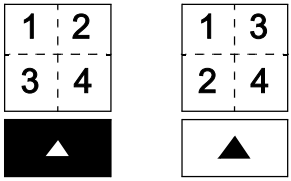
## 4-4. Settings in the User's Choice Mode



<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Memory Recall</td><td>Select whether to enable (“ON”) or disable (“OFF”) the function that retains the image data even after the last copy paper has been fed out, allowing the user to recall the same image data.<br><table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Mixed Original Detection</td><td>Select whether to let the system select by default (“ON”) the Mixed Original Detection mode or not (“OFF”) when power is turned ON or the Panel Reset key pressed.<br><table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Language Selected</td><td>Select the language of the Touch Panel messages.<br><Metric Areas><br><table><tr><td>ENGLISH</td><td>GERMAN</td><td>FRENCH</td></tr><tr><td>DUTCH</td><td>ITALIAN</td><td>SPANISH</td></tr><tr><td>PORTUGUESE</td><td>DANISH</td><td>NORWEGIAN</td></tr><tr><td>SWEDISH</td><td>FINISH</td><td>JAPANESE</td></tr></table><br><Inch Areas><br><table><tr><td>ENGLISH</td><td>FRENCH</td><td>SPANISH</td></tr><tr><td>JAPANESE</td></tr></table></td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Original ▶ Copy Default</td><td>Select the type of Original ▶ Copy setting selected automatically when the copier is turned ON or Panel Reset key pressed. If “Duplex only” is selected for “Simplex/Duplex” of the “Tech. Rep. Choice” function, 1 ▶ 1 is not displayed.<br><1-Sided ▶ 2-Sided><br><table><tr><td>1-Sided ▶<br>2-Sided</td><td>2-Sided ▶<br>2-Sided</td><td>1-Sided ▶<br>1-Sided</td></tr></table><br><1-Sided ▶ 2-Sided><br><table><tr><td>1-Sided ▶<br>2-Sided</td><td>2-Sided ▶<br>2-Sided</td></tr></table></td></tr>
<tr><td>Auto Paper/ Auto Size</td><td>Specify the default mode selected automatically when power is turned ON or the Panel Reset key pressed.<br><table><tr><td>Auto Paper</td><td>Auto Size</td><td>Manual</td></tr></table></td></tr>
<tr><td>Tray Priority</td><td>Specify the paper source selected automatically.<br><table><tr><td>1st Drawer</td></tr><tr><td>2nd Drawer</td></tr><tr><td>3rd Drawer</td></tr><tr><td>4th Drawer</td></tr><tr><td>5th Drawer</td></tr><tr><td>LCT</td></tr></table>✱ Manual Bypass Tray is not selectable.</td></tr>
<tr><td>Special Paper</td><td>Set up a drawer for special paper loading.<br><table><tr><td>Normal</td><td>Not for 2-Sided</td></tr><tr><td>Recycled</td><td>Special</td></tr></table></td></tr>
<tr><td>2 • 4 in 1, Booklet Copy Zoom</td><td>Select whether to enable (“ON”) or disable (“OFF”) recalling a default zoom ratio for 2in1, 4in1, or Booklet Creation.<br><table><tr><td>ON</td><td>OFF</td></tr></table>The default zoom ratios are as follows when “ON” has been selected.<br><table><tr><th>< Metric Areas ></th><th>< Inch Areas ></th></tr><tr><td>× 0.500 4in1</td><td>× 0.500 4in1</td></tr><tr><td>× 0.707 2in1/Booklet</td><td>× 0.647 2in1/Booklet</td></tr><tr><td>× 1.414 Separation</td><td>× 1.545 Separation</td></tr></table></td></tr>
</table>

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Auto Panel Reset | Specify the default exposure mode selected automatically when power is turned ON or the Panel Reset key pressed.<br>30 seconds \| **1 min** \| 2 min<br>3 min \| 5 min \| No Reset |
| Energy Save Mode | Set the time it takes the copier to enter the Energy Saver mode after a copy cycle has been completed or the last key operated. Use the 10-key Pad to set the time (1 to 240 min.).<br>(1 to 240) **(15 min)** |
| Plug-In Counter, ID key Reset | Select whether to reset ("ON") the panel or not ("OFF") automatically when the Access Mode key is pressed or the Key Counter is unplugged.<br>**ON** \| OFF |
| Auto Shut Off | Select whether to turn ON or OFF the Auto Shut Off function that shuts down the copier a given period of time after a copy cycle has been completed or the last key operated. Selecting "ON" means setting the time it takes the Auto Shut Off function to be activated, that can range from 15 min. to 240 min.<br>No Reset \| (15 to 240) **(60 min)**<br>✱ The option of "No Reset" becomes available on the screen if "Yes" is selected for "Disable Sleep" of Utility - Admin. Management - Administrator Set. |
| LCD Back-light Off | Set the time it takes the LCD backlight to turn OFF after a copy cycle has been completed or the last key has been operated.<br>(1 to 240) **(1 min)** |

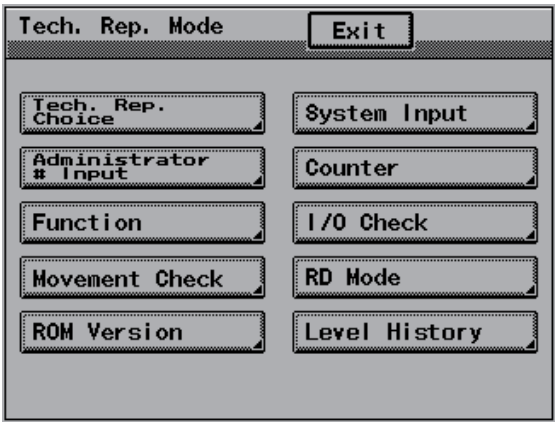
| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| 4 in 1 Copy Order | Specify the default copying order in the 4in1 mode.<br>  |
| Density Priority | Specify the default exposure mode selected automatically when power is turned ON or the panel Reset key pressed.<br><Density><br>**Auto** \| Manual<br>✱ "Photo" of "Original Image Type" cannot be selected when "Auto" is selected.<br><Original Image Type><br>**Text** \| Photo \| Text/Photo |
| Default Level (Copy) | Auto: Select the default exposure level in the Auto Exposure mode.<br>Manual: Set the default exposure level in the Manual Exposure mode.<br><Auto><br>Lighter \| **Normal** \| Darker<br><Manual><br> <br>Lighter … Darker<br>✱ EXP. 1 (Lighter) to EXP. 9 (Darker) |
| Print Exposure | Set the image density level for printing.<br>-3 \| -2 \| -1 \| **0** \| 1 \| 2 \| 3 |
| Output Priority | Select the default finishing type when the copier is equipped with a Sorter or Staple Sorter.<br>**Non-Sort** / Sort / Group<br>Staple<br>✱ Staple can be combined with either Sort or Group.<br>Hole Punch<br>✱ Hole Punch can be combined with any one of the functions. |

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Intelligent Sorting</td><td>When the system is equipped with a finishing option and the ADF is being used, select whether to turn “ON” or “OFF” the function that automatically switches between Sort and Non-Sort according to the number of originals loaded in the ADF.
<table>
<tr><td>ON</td><td>OFF</td></tr>
</table>
</td></tr>
<tr><td>Output Tray</td><td>Select the output tray for each application when the system is equipped with a Job Tray or Finisher.<br><Printer><br>• Job Tray
<table>
<tr><td>1</td><td>2</td></tr>
</table>
• Finisher
<table>
<tr><td>1</td><td>2</td></tr>
</table>
<Copier>
<table>
<tr><td>1</td><td>2</td></tr>
</table>
✱ 1: 1st tray; 2: 2nd tray<br>✱ When the system is equipped with a Finisher, the option of “Copier” and the tray designation keys “1” and “2” are not displayed.</td></tr>
<tr><td>Small ID Original</td><td>Select whether to enable (“ON”) a copy cycle or not (“OFF”) when it is initiated with no original placed on the Original Glass or with an original of a small size that is not detectable by the system (smaller than A5) placed on the Original Glass.
<table>
<tr><td>ON</td><td>OFF</td></tr>
<tr><td>The copy cycle is run using the paper loaded in the default paper source.</td><td>A warning message is given and the copier inhibits the start of this copy cycle.</td></tr>
</table>
</td></tr>
<tr><td>Scanner Dry</td><td>Set the time-of-day to run a Scanner drying cycle.
<table>
<tr><th>Hours</th><th>Minutes</th></tr>
<tr><td>00 ~ 23</td><td>00 ~ 59</td></tr>
</table>
✱ When entering a value for Hours and Minutes and if it is a one-digit number, first enter a “0.”</td></tr>
</table>

# 5 TECH. REP. MODE

- This mode is used by the Tech. Rep. to set, check, adjust, and/or program various service functions.

## 5-1. Tech. Rep. Mode Menu Screen

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## 5-2. Tech. Rep. Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by the following method:
   - With the "Meter Count" screen opened from the Utility menu screen, press the following keys in this order:

   Stop Key → 0 → 0 → Stop Key → 0 → 1

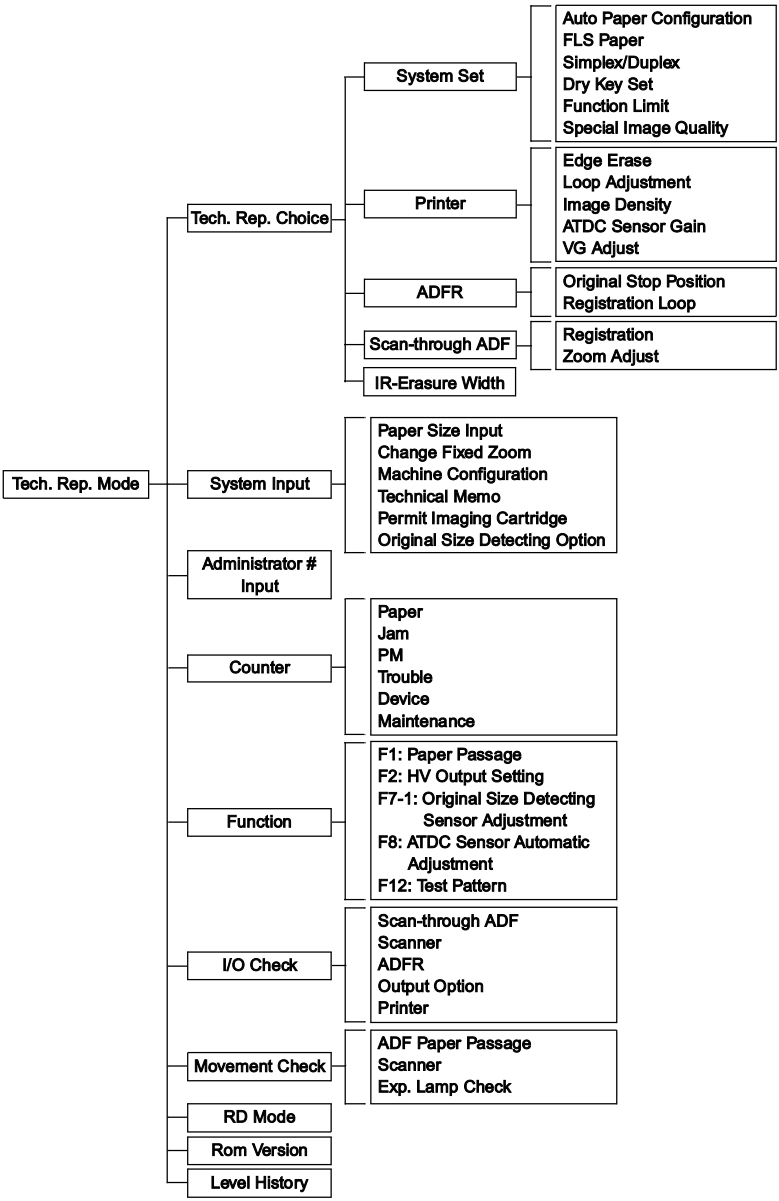
2. Select the particular Tech. Rep. mode function to be set.
3. Make the necessary settings according to the function selected.

✱ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the screen to go back to the Basic screen.

## 5-3. Tech. Rep. Mode Setting Tree



## 5-4. Settings in the Tech. Rep. Mode

### (1) Tech. Rep. Choice

- This function allows the Tech. Rep. to make the various settings and adjustments.

<Function>
1. System Set
2. Printer
3. ADFR
4. Scan-through ADF

<Setting Procedure>
1. Touch [Tech. Rep. Choice] to open a screen to Tech. Rep. Choice.
2. Touch the desired major category key.
3. Touch the desired sub-category key.

Tech. Rep. Mode ▶ Tech. Rep. Choice

<System Set>

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Auto Paper Configuration</td><td><Metric Areas><br>Select either “Inch/Metric” or “Metric” for rounding off the original size detected.
<table>
<tr><td>Inch / Metric</td><td>The measurement is rounded to the nearest standard inch or metric size.</td></tr>
<tr><td>Metric</td><td>The measurement is rounded to the nearest standard metric size.</td></tr>
</table>
<Inch Areas><br>Select either “Inch/Metric” or “Inch” for rounding off the original size detected.
<table>
<tr><td>Inch / Metric</td><td>The measurement is rounded to the nearest standard inch or metric size.</td></tr>
<tr><td>Inch</td><td>The measurement is rounded to the nearest standard inch size.</td></tr>
</table></td></tr>
<tr><td>FLS Paper</td><td>Set the size for FLS.
<table>
<tr><td>F: 330 mm<br>C: 203 mm</td><td>F: 330mm<br>C: 210mm</td><td>F: 330 mm<br>C: 216 mm</td><td>F: 330 mm<br>C: 220 mm</td></tr>
</table></td></tr>
<tr><td>Simplex/Duplex</td><td>Select whether or not to enable the setting of 1-Sided ▶ 1-Sided under Original ▶ Copy Default available from User's Choice.<br>✱ If “Simplex & Duplex” is selected, 1-Sided ▶ 1-Sided becomes available as an option.
<table>
<tr><td>Display</td><td>Simplex & Duplex</td><td>Duplex Only</td></tr>
<tr><td>Description</td><td>Does not limit the options for Original ▶ Copy Default to 2-sided copying only.</td><td>Limits the options for Original ▶ Copy Default to 2-sided copying only.</td></tr>
</table></td></tr>
</table>

Tech. Rep. Mode ▶ Tech. Rep. Choice

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Dry Key Set | Select whether to display the Dry key for "User Management" of Utility. If the key is to be displayed, select whether to dry only the Scanner or both Scanner and Drum.<br>Scanner / Scanner & Drum / **Disable** |
| Function Limit | Select whether to limit ("ON") the functions to be set on the control panel or not ("OFF").<br>ON: Enables the functions other than Orig. ▶ Copy and Auxiliary.<br>**OFF**: Enables all functions (no Limit). |
| Special Image Quality | Select whether to enable the selection of Special Image Quality for "Density Priority" of User's Choice (applicable on a case-by-case basis).<br>✱ Touching the "✱" key on the System Set menu selects or cancels this function.<br>✱ Key high-lighted: The Special Image Quality key is displayed.<br>✱ Key not high-lighted: The Special Image Quality key is not displayed. |

<Printer>

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Edge Erase | Set the erase width on the leading, trailing, right, and left edge of the image.<br>Leading / Trailing / Right/Left: 0mm ..... **4** ..... 5mm<br>Smaller ◄——► Greater |
| Loop Adjustment | Set the loop length to be formed before the Synchronizing Rollers.<br>1st Drawer / Other Drawers / Duplex & Manual: -5mm ..... **0** ..... +5mm<br>Smaller ◄——► Greater |

Tech. Rep. Mode ▶ Tech. Rep. Choice

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Image Density | Set the image density for the printer.<br>✱ The value set for this function becomes the central value of "Print Exposure" of User's Choice.<br>-2 ..... **0** ..... +4<br>Lighter ◄——► Darker |
| ATDC Sensor Gain | Current: Shows the current ATDC control voltage.<br>Set: Set the ATDC control voltage.<br>✱ If the "Set" value is to be changed, be sure to record the "Current" value.<br>✱ The ATDC Sensor Gain value can be converted to a voltage value using the following equation.<br>ATDC Sensor Gain = 5.1 × 2.2 × [setting value] ÷ 256 (V)<br>123 ..... **155** ..... 186<br>T/C Greater ◄——► T/C Smaller |
| VG Adjust | Set VG when a fog or void occurs in the image.<br>-2 ..... **0** ..... +2<br>Lighter ◄——► Darker |

<ADFR>

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Original Stop Position | Set the document stop position in each of the ADFR modes.<br>1-Sided Set / 2-Sided Set / Single Feed Set: -7 ..... **0** ..... +7<br>Original Width Scale end ◄——► Original Glass end<br>✱ The minimum setting value is -6 only for 2-Sided Set. |
| Registration Loop | Set the loop length to be formed in the original before the Registration Roller of ADFR.<br>-5mm ..... **0** ..... +5mm<br>Smaller ◄——► Greater |

<Scan-through ADF>

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Registration | Adjust registration in the main and sub scanning directions of the ADF.<br>-127 dot.....**0**.....+127 dot<br>Smaller ◄——► Greater |
| Zoom Adjust | Adjust the scanning zoom ratio in the main and sub scanning directions of the ADF.<br>0.990.....**1.000**..... 1.010<br>Smaller ◄——► Greater |

<IR-Erasure Width>

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| IR-Erasure Width | Set the forced erasure width along the four edges of the paper to erase shadows which are otherwise produced by the Original Scales.<br>**0mm**.....3mm<br>Smaller ◄——► Greater |

**(2) System Input**

- This function allows the Tech. Rep. to change the fixed zoom ratios, set the paper size, define the marketing area, configure for the Key Counter, and input the telephone number.

<Setting Procedure>
1. Touch [System Input] to open the System Input menu screen.
2. Touch the desired subfunction key.

Tech. Rep. Mode ▶ System Input

| Touch Panel Display | Operation |
|---|---|
| Paper Size Input | Set the size of the paper used in each paper source.<br>✱ This function cannot be used for the LCC as its paper is set with its internal DIP switch.<br><Procedure><br>1. Touch the key of the paper source for which the paper size setting is to be changed to show the Paper Size Input screen.<br>2. Touch the desired paper size key.<br>✱ If the 10-key Pad has been selected, enter the FD and CD size of the paper from the 10-Key Pad.<br>3. Touch [END] to validate the paper size setting. |
| Change Fixed Zoom | Change a fixed zoom ratio to a desired value in the range between ×0.250 and ×4.000.<br><Procedure><br>1. Touch the key of the fixed zoom ratio to be changed.<br>2. Press the Clear key to clear the setting and enter the new ratio from the 10-Key Pad.<br>3. Touch [Input] to validate the new setting. |
| Machine Configuration | Displays the machine configuration status. |
| Technical Memo | Enter the serial number and other data. |
| Permit Imaging Cartridge | Select whether to permit the use of an illegal Imaging Cartridge installed. The use is enabled when [Enter] is touched after "Yes" has been selected.<br>✱ It is not possible to disable the use of an Imaging Cartridge once permitted.<br>Yes / **No** |
| Original Size Detecting Option | Set whether the optional Original Size Detecting Sensor is available or not.<br>ON / **OFF** |

### (3) Administrator # Input

- This function allows the Tech. Rep. to set the administrator number that is used to open the "Admin. Management" screen of Utility.

<Setting Procedure>
1. Touch [Administrator # Input] to open the Administrator # Input menu screen.
2. Blank out the numeric data with the Clear key and enter the desired number from the 10-Key Pad.
3. Touch [Enter] to validate the entry of the number.

Tech. Rep. Mode ▶ Administrator # Input

| Touch Panel Display | Operation |
|---|---|
| Administrator # Input | Set the administrator number used to open the "Admin. Management" screen of Utility from the 10-Key Pad.<br>(1 to 8 digits: 0 to 99999999) |

### (4) Counter

- This function maintains the counts of the various counters, thus aiding the Tech. Rep. in performing service jobs.

<Setting Procedure>
1. Touch [Counter] to open the Counter menu screen.
2. Touch [Check] and then the desired counter to open the detailed counter screen.
3. To clear a count, touch [Counter Reset], the key of the counter to be cleared, and [END].

✱ Two or more counters can be selected.

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Paper</td><td>Shows the number of sheets of paper used by the size and type. Each counter may be reset to 0 independently of the others:<br><Paper Counter 1/2><br>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>A3</td><td>A3L</td></tr>
<tr><td>B4</td><td>B4L</td></tr>
<tr><td>A4</td><td>A4L/C</td></tr>
<tr><td>B5</td><td>B5L/C</td></tr>
<tr><td>A5</td><td>A5L/C</td></tr>
<tr><td>B6</td><td>B6L</td></tr>
<tr><td>A6</td><td>A6L</td></tr>
<tr><td>11 × 17</td><td>11" × 17"L</td></tr>
<tr><td>11 × 14</td><td>11" × 14"</td></tr>
<tr><td>Letter</td><td>Letter L/C</td></tr>
<tr><td>Legal</td><td>Legal L/C</td></tr>
<tr><td>5-1/2 × 8-1/2</td><td>5-1/2" × 8-1/2" L/C</td></tr>
</table>
<Paper Counter 2/2><br>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>FLS.</td><td>FLS.</td></tr>
<tr><td>Normal</td><td>Normal</td></tr>
<tr><td>Recycled</td><td>Recycled</td></tr>
<tr><td>Special</td><td>Special</td></tr>
<tr><td>Not for 2-Sided</td><td>Not for 2-Sided</td></tr>
</table>
<Clearing a Count><br>Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.</td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Jam</td><td>Shows the number of misfeeds that have occurred in different parts of the system, together with rates of occurrence (MCBJ, MDBJ). Each counter may be reset to zero independently of the others:
<br><Jam Counter 1/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MCBJ System</td><td>Average no. of copies made for each paper misfeed:<br>MCBJ Total Counter ÷ Jam Counter (including misfeeds in Finisher)</td></tr>
<tr><td>MCBJ Machine Only</td><td>Average no. of copies made for each paper misfeed:<br>MCBJ Total Counter ÷ Jam Counter (excluding misfeeds in Finisher)</td></tr>
<tr><td>1st Drawer</td><td>No. of misfeeds that occurred at the 1st Drawer of the copier</td></tr>
<tr><td>2nd Drawer</td><td>No. of misfeeds that occurred at the 2nd Drawer of the copier</td></tr>
<tr><td>3rd Drawer</td><td>No. of misfeeds that occurred at the 3rd Drawer of the copier</td></tr>
<tr><td>4th Drawer</td><td>No. of misfeeds that occurred at the 4th Drawer of the copier</td></tr>
<tr><td>5th Drawer</td><td>No. of misfeeds that occurred at the 5th Drawer of the copier</td></tr>
</table>
<Jam Counter 2/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Manual Feed</td><td>No. of misfeeds that occurred at the Manual Bypass Tray</td></tr>
<tr><td>Vertical Transport</td><td>No. of misfeeds that occurred at the paper take-up/transport section of the copier</td></tr>
<tr><td>Separator</td><td>No. of misfeeds that occurred at the paper separator section of the copier</td></tr>
<tr><td>Fusing</td><td>No. of misfeeds that occurred at the Fusing Unit of the copier</td></tr>
<tr><td>Duplex Entrance</td><td>No. of misfeeds that occurred at the turnover/storage section of the copier</td></tr>
<tr><td>Duplex Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the Duplex</td></tr>
<tr><td>LCC Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the LCC</td></tr>
</table>
<Jam Counter 3/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>LCC Transport</td><td>No. of misfeeds that occurred in the LCC transport section</td></tr>
<tr><td>Shift/2Bin Tray Transport</td><td>No. of misfeeds that occurred in the Shift/Job Tray transport section</td></tr>
<tr><td>Shift/2Bin Tray Exit</td><td>No. of misfeeds that occurred in the Shift/Job Tray exit section</td></tr>
<tr><td>Finisher Horizontal Transport</td><td>No. of misfeeds that occurred in the Finisher horizontal transport section</td></tr>
<tr><td>Finisher Transport</td><td>No. of misfeeds that occurred in the Finisher transport section</td></tr>
<tr><td>Finisher Exit</td><td>No. of misfeeds that occurred in the Finisher exit section</td></tr>
<tr><td>Finisher Staple</td><td>No. of Finisher staple misfeeds that occurred</td></tr>
</table>
* 2Bin Tray = Job Tray</td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Jam</td><td>
<Jam Counter 4/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Finisher Set Transport</td><td>No. of misfeeds that occurred in the Finisher Tray</td></tr>
<tr><td>MDBJ</td><td>Average no. of document transport sequences for each document misfeed:<br>ADFR Document Passage Counter ÷ ADFR Jam Counter</td></tr>
<tr><td>ADF (Scan-through ADF) Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the ADF (Scan-through ADF)</td></tr>
<tr><td>ADF (Scan-through ADF) Transport</td><td>No. of misfeeds that occurred at the document transport section of the ADF (Scan-through ADF)</td></tr>
<tr><td>ADFR Reverse</td><td>No. of misfeeds that occurred at the document turnover and exit sections of the ADFR</td></tr>
<tr><td>SADF</td><td>No. of misfeeds that occurred at the SADF</td></tr>
</table>
<Jam Counter 5/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Printer</td><td>No. of misfeeds that occurred due to illegal designation of FCU2</td></tr>
<tr><td>Engine</td><td>No. of misfeeds that occurred due to communication error with engine (VD fault)</td></tr>
</table>
<Clearing a Count><br>Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>PM</td><td>
Shows the frequency of use of each of the PM parts. Each counter may be reset to 0 independently of the others:
<PM Counter 1/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>I/C Life</td><td>No. of revolutions of I/C</td></tr>
<tr><td>Fusing Unit</td><td>No. of times a sheet of paper is fed out</td></tr>
<tr><td>1st Drawer</td><td>No. of sheets of paper fed from the 1st Drawer</td></tr>
<tr><td>2nd Drawer</td><td>No. of sheets of paper fed from the 2nd Drawer</td></tr>
<tr><td>3rd Drawer</td><td>No. of sheets of paper fed from the 3rd Drawer</td></tr>
<tr><td>4th Drawer</td><td>No. of sheets of paper fed from the 4th Drawer</td></tr>
<tr><td>5th Drawer</td><td>No. of sheets of paper fed from the 5th Drawer</td></tr>
</table>
<PM Counter 2/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>LCC Parts 1</td><td>No. of sheets of paper fed from the LCC (for 200k)</td></tr>
<tr><td>LCC Parts 2</td><td>No. of sheets of paper fed from the LCC (for 300k)</td></tr>
<tr><td>Other PM Parts 1</td><td>No. of print cycles run (for 100k)</td></tr>
<tr><td>Other PM Parts 2</td><td>No. of print cycles run (for 150k)</td></tr>
<tr><td>Other PM Parts 3</td><td>No. of print cycles run (for 60k/120k)</td></tr>
<tr><td>1-Sided</td><td>No. of times a 1-sided original is fed through</td></tr>
<tr><td>2-Sided</td><td>No. of times a 2-sided original is fed through</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>PM</td><td>
<PM Counter 3/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>SADF<br>IR 1<br>IR 2<br>2 Bin Tray<br>Toner Pages</td><td>No. of single feeds<br>No. of scan motions (for 60k)<br>No. of scan motions (120k)<br>No. of cycles of feeding paper out into Job Tray<br>No. of pages equivalent to the no. of black dots on A4 original with B/W 5%</td></tr>
</table>
✱ 2Bin Tray = Job Tray<br><br>
<Clearing a Count><br>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.<br>
✱ I/C Life cannot be cleared.
</td></tr>
<tr><td>Trouble</td><td>
Shows the number of malfunctions that have occurred in different parts of the system. Each counter may be reset to 0 independently of the others:<br>
<Trouble Counter 1/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0000<br>C0010<br>C0045<br>C004C</td><td>Main Motor<br>I/C Motor<br>Cooling Fan<br>Ventilation Fan</td><td>C004E<br>C0070<br>C0500<br>C0510</td><td>Cooling Fan (Power Supply)<br>Toner Bottle Motor<br>Fusing Warming-up<br>Fuser Low Temperature</td></tr>
</table>
<Trouble Counter 2/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0520<br>C0650<br>C0651<br>C0990</td><td>Fuser High Temperature<br>Home Sensor<br>Left Sensor<br>LCC Transport Motor</td><td>C0991<br>C0995<br>C0999<br>C099D</td><td>LCC Lift 1 Limit<br>LCC Lift Motor<br>LCC Lift 2 Limit<br>LCC Communication</td></tr>
</table>
<Trouble Counter 3/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0B00<br>C0B0F<br>C0B30<br>C0B38</td><td>Transport Drive Motor<br>Horiz. Trans. Route Switch<br>Paper Aligning Bar Unit<br>Paper Standard Board Unit</td><td>C0B4D<br>C0B4E<br>C0B50<br>C0B80</td><td>Assist Tray Unit<br>Transaction Tray Unit<br>Staple Unit<br>Shift Tray Shift</td></tr>
</table>
<Trouble Counter 4/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0BA0<br>C0F32<br>C0F33<br>C1038</td><td>Elevate Motor<br>ATDC Sensor<br>ATDC Adjust<br>Engine Connection</td><td>C1300<br>C1330<br>C133A</td><td>Polygon Motor<br>Communication Error (VSYNC)<br>Communication Error (G/A)</td></tr>
</table>
</td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Trouble</td><td>
<Trouble Counter 5/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C133B<br>C13C0<br>C13D0</td><td>Communication Error (Option)<br>I/C Initial Error<br>EEPROM</td><td>C13F0<br>C18XX</td><td>HSYNC (SOS)<br>Printer Controller Error</td></tr>
</table>
<Clearing a Count><br>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>Device</td><td>
Shows the numbers of prints for different applications. It also allows the Tech. Rep. to clear each counter.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Copier</td><td>No. of prints made by copier</td></tr>
<tr><td>Printer</td><td>No. of prints made by printer</td></tr>
<tr><td>Report Print</td><td>No. of report prints made</td></tr>
<tr><td>Fax Print</td><td>No. of fax prints made</td></tr>
<tr><td>Fax Transmission</td><td>No. of prints made for fax transmission</td></tr>
</table>
<Clearing a Count><br>
Select the counter to be cleared with the item key and press the Clear key. If the count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>Maintenance</td><td>
• This function allows the Tech. Rep. to set the number of copies to be made before the Maintenance Call reminder is given. (1k ~ 9999k)<br>
• It shows the current count value and the above setting. Each counter may be reset to 0 independently of the others:<br>
• When the count reaches the preset value, the icon "⚠" appears in the Status Display.<br>
✱ When "Call Indicated" is selected for "Maintenance Call" available from Tech. Rep. Choice.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Maintenance (Set)</td><td>The Maintenance Call reminder is given when the count reaches the preset value.</td></tr>
<tr><td>Maintenance (Count)</td><td>Counts one for each copy made.</td></tr>
</table>
<Setting a Count><br>
1. Touch [Maintenance (Set)] and then press the Clear key to clear the count. If the count is accidentally cleared, pressing the interrupt key will undo the clear operation.<br>
2. Enter the desired value from the 10-Key Pad.<br><br>
<Clearing a Count><br>
Touch [Maintenance (Count)] and then press the Clear key to clear the count. If the count is accidentally cleared, pressing the interrupt key will undo the clear operation.
</td></tr>
</table>

**(5) Function**

- This function allows the Tech. Rep. to run the various function tests and make adjustments.

<Setting Procedure>

1. Touch [Function] to open the Function menu screen.
2. Select the particular function to be run.

Tech. Rep. Mode ▶ Function

| Touch Panel Display | Operation |
|---|---|
| F1 | <Paper Passage><br>A paper passage test is carried out after the copier has completed warming up.<br><Procedure><br>1. Select the paper source key. (Touch [Duplex] to check for paper passage from the Duplex Unit.)<br>✱ If the paper source is not loaded with paper, an Add Paper mark appears at that source.<br>2. Press the Start key to start the test cycle. The test runs until the paper source runs out of paper.<br>3. If the Stop key is pressed, the copier feeds the current sheet of paper out before halting. (Another press of the Start key will resume the test cycle.) |
| F2 | <HV Output Setting><br>Set the output of each HV.<br>✱ This function is only for factory setting and should never be used in the field. |
| F7-1 | <Original Size Detecting Sensor Adjustment><br>Automatically adjusts the Original Size Detecting Sensors.<br><Procedure><br>1. Stack five sheets of A3 or 11" × 17" paper on the Original Glass and lower the Original Cover.<br>2. Press the Start key to let the system start the adjustment sequence.<br>✱ The system automatically stops as soon as the adjustment sequence is completed. It can nonetheless be halted in mid-sequence with the Stop key, which, however, results in incorrect size detection as the adjustment sequence is incomplete. |
| F8 | <ATDC Sensor Automatic Adjustment><br>Automatically makes the ATDC Sensor adjustment.<br><Procedure><br>Press the Start key to let the system start the adjustment sequence.<br>✱ The voltage automatically adjusted by this function is displayed for ATDC Sensor Gain of the Level History data. |

Tech. Rep. Mode ▶ Function

| Touch Panel Display | Operation |
|---|---|
| F12 | <Test Pattern><br>Outputs a test pattern.<br>✱ If 2-sided is specified, the system outputs a test pattern in the 2-sided mode.<br><Procedure><br>1. Touch the desired paper source key. (Touch [Duplex] for test pattern output on paper fed from the Duplex Unit.)<br>✱ If the paper source is not loaded with paper, an Add Paper mark appears at that source.<br>2. Press the Start key to start the output sequence. (It continues until the paper source runs out of paper.)<br>3. Press the Stop key to halt the sequence. |

**(6) I/O Check**

- This function displays the details of inputs to each sensor.

<Setting Procedure>
1. Touch [I/O Check] to open the I/O Check menu screen.
2. Touch the desired subfunction key.

Tech. Rep. Mode ▶ I/O Check

| Touch Panel Display | Operation |
|---|---|
| Scan-through ADF | |
| IR | *NOTE*<br>• *For details, see TROUBLESHOOTING.* |
| ADFR | |
| Output Option | |
| Printer | |

### (7) Movement Check

- This function runs a specified mechanism to check for operation.

<Setting Procedure>
1. Touch [Movement Check] to open the Movement Check menu screen.
2. Touch the desired subfunction.

Tech. Rep. Mode ▶ Movement Check

| Touch Panel Display | Operation |
|---|---|
| ADF Paper Passage | Feeds paper through the ADF in the specified mode to check for correct operation.<br>1-sided No Detect / 1-sided Mixed Orig / 2-sided / SADF<br><Procedure><br>1. Select ADF Paper Passage.<br>2. Touch the desired mode key.<br>3. Load originals in the ADF.<br>4. Press the Start key to let the ADF start feeding originals.<br>✱ Pressing of the Start key temporarily stops the ADF. (Another press will let the ADF resume the sequence.)<br>✱ The sequence is completed when there is no more originals in the ADF; however, it is possible to halt the sequence in mid-operation by pressing the Stop key. |
| Scanner | • Drives the CCD.<br>• Turns ON the Exposure Lamp.<br>• Moves the Scanner according to the set value. |
| Exp. Lamp Check | Checks for the intensity of the Exposure Lamp light. |

### (8) RD Mode (SMART)

✱ "SMART" is displayed for the inch areas.

Tech. Rep. Mode ▶ RD Mode

| Touch Panel Display | Setting |
|---|---|
| RD Mode | For making the initial settings of the copier for the Data Terminal. |
| ID Code | Enter a 7-digit ID code (0000001 to 9999999) from the 10-Key Pad to enable making the following settings. When the ID code is entered and transmitted after the initial settings have been made, it executes the transmission of MAINT. START to the Center.<br>✱ 0000000 is invalid. |
| Maintenance | Used to make the initial settings and various transmissions. |
| DT Setting | Enter the following data. |
| CT-ID (Password) | Using the 10-Key Pad, enter the 4-digit ID number (0001 to 9999) of the Center which has been programmed in the Center personal computer.<br>✱ 0000 is invalid. |
| DT-ID | Using the 10-Key Pad, enter the 6-digit ID number (000001 to 999999) of the Data Terminal.<br>✱ 000000 is invalid. |
| TEL No. | Enter the 19-or-less-digit phone number of the modem connected to the Center personal computer from the 10-Key Pad.<br>✱ In addition to the 10-Key Pad and Clear key, use the following keys to enter the phone number.<br>Interrupt key: For a pause (3 sec. or more), "-"<br>Pause key: For a pause (3 sec. or more), "-"<br>P key: For a "pulse" dialing, "P"<br>T key: For a "tone" dialing, "T"<br>W key: For a wait code (waiting for a signal from the other party), "W"<br>✱ key: For an ISDN subaddress, "✱"<br># key: For switching from the extension line to outside line, or vice versa, "#" |
| Initial Transmission | Used to perform the initial transmission from the copier to the Center to check for correct communication when the Data Terminal has been set up. |
| Counter Clear | Used to clear the count of the spare counter set by the Center.<br><Procedure><br>1. Touch [Counter Clear] to open the Counter Clear screen.<br>2. Touch the number assigned to the counter to be cleared. |
| Call Completion | Used by the Tech. Rep. to notify the Center that his/her service job for the copier has been completed. |

Tech. Rep. Mode ▶ RD Mode

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| RD Mode | ——— |
| RAM Clear | Reinitializes the Data Terminal.<br>YES / **NO** |
| Common DT | Set the following functions. |
| Dial Mode | Select the type of telephone line of the user.<br>**Tone** / Pulse |
| Auto Receive | Choose "Yes" or "No" for the auto reception function.<br>**YES** / NO<br>✱ Select "Yes" if the line is dedicated to the Data Terminal. |
| Result Code | Enter the result code for connection to the modem when the line is connected. (0 to 999) |

### (9) ROM Version

Tech. Rep. Mode ▶ ROM Version

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>ROM Version</td><td>Displays the current ROM version information.<br>✱ No version information is displayed for a machine that is not connected to the system.<br><Procedure><br>1. Touch [ROM Version] to open the ROM Version screen.<br>2. The screen shows the ROM version information of various machines configured in the system.
<table>
<tr><th colspan="2">Display</th><th>Description</th></tr>
<tr><td>MSC</td><td>—</td><td>MFB Board</td></tr>
<tr><td>Message</td><td>IC4</td><td>MFB Board</td></tr>
<tr><td>Printer</td><td>IC1</td><td>Master Board</td></tr>
<tr><td>ADFR</td><td>IC3</td><td>ADFR Board</td></tr>
<tr><td>LCC</td><td>IC7</td><td>LCC Board</td></tr>
<tr><td>Finisher</td><td>IC3</td><td>Finisher/Job Tray Board</td></tr>
<tr><td>IIF</td><td>—</td><td>IIF2 Board</td></tr>
</table>
</td></tr>
</table>

**(10) Level History**

- This function is used to show the various level histories which are changed according to the operating conditions of the copier and user requirements.

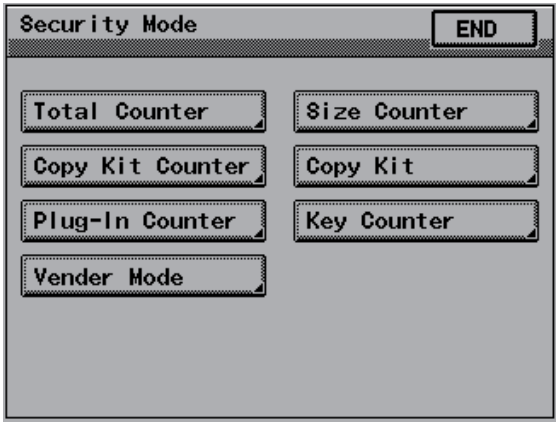
Tech. Rep. Mode ▶ Level History

<table>
<tr><th>Touch Panel Display</th><th>Setting</th></tr>
<tr><td>Level History</td><td>
<ATDC Set><br>
Shows the voltage set by ATDC Sensor Automatic Adjustment (F8).<br>
✱ The Level History data is updated when the ATDC Sensor Automatic Adjustment (F8) is completed.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>123 to 186 (steps)</td><td>1 Step</td></tr>
</table>
<ATDC Current><br>
Shows the current, approximate ATDC Sensor T/C setting in percentage.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>3.0 to 19.0 (%)</td><td>0.5%</td></tr>
</table>
<Vg Current><br>
Displays the grid voltage as corrected through image stabilization and related functions.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>-514 to -728 (V)</td><td>-</td></tr>
</table>
<Vb Current><br>
Displays the developing bias voltage as corrected through image stabilization and related function.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>-409 to -623 (V)</td><td>-</td></tr>
</table>
</td></tr>
</table>

# 6 SECURITY MODE

- This function allows the Tech. Rep. to make various settings.

## 6-1. Security Mode Menu Screen




1167S011CA

## 6-2. Security Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by one of the following methods:
   A. With the copier turned ON, press the Tech. Rep. Setting Switch.
   B. With the Meter Count screen opened from Utility, press the following keys in this order:

   Stop Key → 0 → 0 → Stop Key → 0 → 1

2. Enter the Security mode by pressing the following keys in this order:

   Stop Key → 9

3. Select the particular Security mode to be set.
4. Make the necessary settings by following the instructions given sequentially on the screen.

✱ The Function selected is highlighted.

<Exiting the Mode>

Perform any one of the following steps to go back to the Basic screen.

- Press the Panel Reset key and Touch [Exit] on the Tech. Rep. Mode screen.
- Touch [END] on the Security Mode screen. Then touch [Exit] on the Tech. Rep. Mode screen.

## 6-3. Settings in the Security Mode

Tech. Rep. Mode ▶ Security Mode

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Total Counter</td><td>Select the conditions by which the Total Counter count is increased.
<table>
<tr><td>Mode 1</td><td>1 count per 1 copy cycle (normal mode)</td></tr>
<tr><td>Mode 2</td><td>Multiple count-up according to paper size and 1/2-sided copying</td></tr>
<tr><td>Mode 3</td><td>Multiple count-up according to paper size and 1/2-sided copying</td></tr>
</table>
✱ See the Count-up Table for details.</td></tr>
<tr><td>Size Counter</td><td>Select the size of the paper to be counted by the Size Counter.
<table>
<tr><td>No Count</td><td>A3<br>11×17</td><td>A3 / B4<br>11×17<br>Legal</td><td>A3 /11×17<br>B4 /11×14<br>FLS/Legal</td><td>A6</td></tr>
</table>
✱ See the Count-up Table for details.</td></tr>
<tr><td>Copy Kit</td><td>• Allows for setting the desired threshold before the Maintenance Call reminder is given.<br>• Displays both the current value and the above setting value. Each counter can also be reset independently of the other.<br>• When the current value (Current) becomes the setting value (Set), the icon “⚠” appears in the Status Display if “Mode 2” is selected for “Copy Kit Counter” and the Maintenance Call reminder (M4) is displayed if “Mode 3” is selected for “Copy Kit Counter.”<br>✱ Whether the initiation of a new copy cycle is inhibited or not when the current value exceeds the setting value depends on the setting made with Copy Kit Counter.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Set</td><td>Gives a Maintenance Call when Current value reaches Set value.</td></tr>
<tr><td>Current</td><td>Counts up for each copy made.</td></tr>
</table>
<Counter Setting Procedure><br>1. Touch [Set] and press the Clear key to clear the current setting. If the setting is accidentally cleared, pressing of the Interrupt key will undo the clear operation.<br>2. Enter the desired value from the 10-Key Pad.<br><Clearing the Count><br>Touch [Current] and press the Clear key to clear the count. If the count is accidentally cleared, pressing of the Interrupt key will undo the clear operation.</td></tr>
</table>

Tech. Rep. Mode ▶ Security Mode

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Copy Kit Counter</td><td>Select whether to set the count or not for the Copy Kit Counter and select whether to inhibit the initiation of a new copy cycle or not when the Current value reaches Set value.
<table>
<tr><td>Mode 1</td><td>No counting</td></tr>
<tr><td>Mode 2</td><td>Counted and permits copying even when the Set value is reached.</td></tr>
<tr><td>Mode 3</td><td>Counted and inhibits copying when the Set value is reached.</td></tr>
</table></td></tr>
<tr><td>Plug-In Counter</td><td>Select the condition by which the Key Counter count is increased.
<table>
<tr><td>Copies Made</td><td>Copy Cycles</td></tr>
</table>
✱ See the Count-up Table for details.</td></tr>
<tr><td>Key Counter</td><td>Set whether a Key Counter is plugged in (“ON”) or not (“OFF”).
<table>
<tr><td>ON</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>Vender Mode</td><td>Select the medium to be used when the Key Counter or Vender is used.<br>✱ This function is not valid if “OFF” is selected for “Key Counter.”
<table>
<tr><td>OFF</td><td>Coin</td><td>Card</td></tr>
</table></td></tr>
</table>

<Count-up Table>

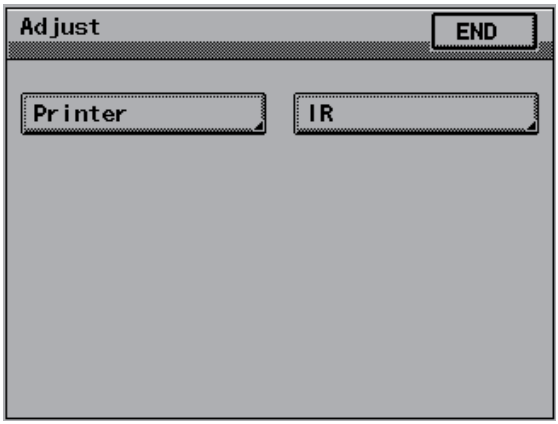
| Copying | | 1-Sided | | | | | | 2-Sided | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Size | | Size other than those set | | | Set size | | | Size other than those set | | | Set size | | |
| Total | | Mode | | | Mode | | | Mode | | | Mode | | |
| | | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| Total (mechanical, electronic) | | 1 | | | 1 | 2 | 2 | 2 | | | 2 | 4 | 4 |
| Size (electronic) | | 0 | | | 1 | 1 | 2 | 0 | | | 2 | 2 | 0 |
| 2-Sided Total (electronic) | | 0 | | | 0 | | | 1 | 1 | 2 | 1 | 1 | 4 |
| 2-Sided Size (electronic) | | 0 | | | 0 | | | 0 | | | 1 | 1 | 4 |
| Total by account | | 1 | | | 1 | 2 | 2 | 2 | | | 2 | 4 | 4 |
| Size by account | | 0 | | | 1 | 1 | 2 | 0 | | | 2 | 2 | 4 |
| Key (mechanical) | Counting copies | 1 | | | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 4 | 4 |
| | Counting copy cycles | 1 | | | 1 | 2 | 2 | 2 | | | 2 | 4 | 4 |

0: No count 1: 1 count 2: 2 counts 3: 3 counts 4: 4 counts

# 7 ADJUST MODE

- Adjust mode is for adjustments to be made before shipment at the factory. As a rule, use this mode only when MFB Board UN2, or EEPROM (IC3A) on Master Board PWB-A has been replaced with a new one.

## 7-1. Adjust Mode Menu Screen

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## 7-2. Adjust Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by the following method:

- With the Meter Count screen opened from Utility, press the following keys in this order.

[Stop Key] → [0] → [0] → [Stop Key] → [0] → [1]

2. Enter the Adjust mode by pressing the following keys in this order:

[Stop Key] → [Start Key]

3. Select the particular Adjust mode function to be set.
4. Make the necessary settings by following the instructions given sequentially on the screen.

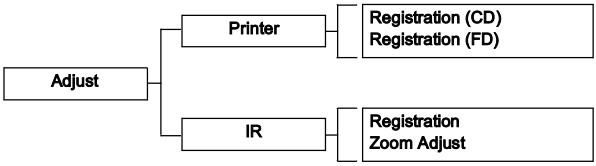
✱ The function selected is highlighted.

<Exiting the Mode>

Perform any one of the following steps to go back to the Basic screen.

- Press the Panel Reset key and Touch [Exit] on the Tech. Rep. Mode screen.
- Touch [END] on the Adjust mode screen. Then touch [Exit] on the Tech. Rep. Mode screen.

## 7-3. Adjust Mode Function Tree




## 7-4. Settings in the Adjust Mode

**(1) Printer**

- This function is used to enter the adjustment values as they relate to the printer.

<Setting Procedure>
1. Touch [Printer] to open the Printer screen.
2. Select the desired subfunction.

Tech. Rep. Mode ▶ Adjust

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Registration (CD)</td><td>Adjust registration of the printer in the main scanning direction.<br><table><tr><td>1st Drawer</td><td rowspan="3">-4.0mm.....0.....+4.0mm</td></tr><tr><td>2nd Drawer</td></tr><tr><td>3rd Drawer</td></tr><tr><td>4th Drawer</td><td rowspan="3">Advanced timing ◄——► Retarded timing</td></tr><tr><td>5th Drawer</td></tr><tr><td>Duplex</td></tr></table>✱ Adjust “Duplex” after adjustments have been completed for all drawers.</td></tr>
<tr><td>Registration (FD)</td><td>Adjust registration of the printer in the sub-scanning direction.<br><table><tr><td>-26.....0.....+26</td></tr><tr><td>Advanced timing ◄——► Retarded timing</td></tr></table></td></tr>
</table>

**(2) IR**

- This function is used to enter the adjustment values as they relate to the IR.

<Setting Procedure>

1. Touch [IR] to open the IR screen.
2. Select the desired subfunction.

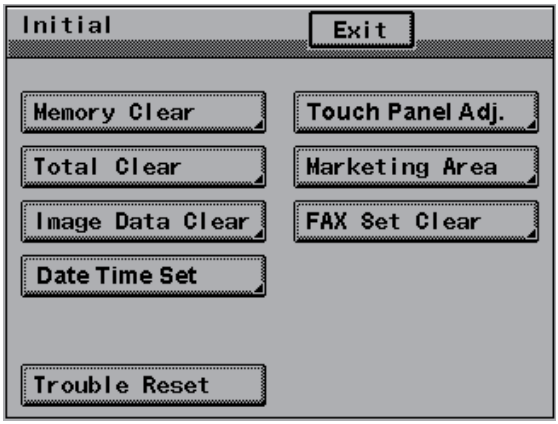
Tech. Rep. Mode ▶ Adjust

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Registration | Adjust registration of the Scanner in the main and sub-scanning directions.<br>-127 dot.....**0**.....+127 dot<br>Smaller ◄——► Greater |
| Zoom Adjust | Adjust the scanning zoom ratio of the Scanner in the main and sub-scanning directions.<br>0.990.....**1.000**.....1.010<br>Smaller ◄——► Greater |

# 8 INITIAL MODE

- Initial mode is used to initialize the various service functions.

## 8-1. Initial Mode Menu Screen




1167S013CB

## 8-2. Initial Mode Function Setting Procedure

<Setting Procedure>

1. Enter the Initial mode by pressing the following keys in this order:

| Warm Restart Switch ON | → | Enter "3" from the 10-Key Pad when "." appears at the center on the left side of the screen while the start-up screen is being displayed. |
|---|---|---|

2. Select the particular Initial mode function to be set.
3. Make the necessary settings by following the instructions given sequentially on the screen.

✱ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the Initial mode screen to go back to the Basic screen.

## 8-3. Settings in the Initial Mode

Tech. Rep. Mode ▶ Initial

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Memory Clear | Clears all data except the electronic counters, Adjust, Copy Track-related, and DT-related settings.<br>Yes / **NO** |
| Touch Panel Adj. | Corrects deviation in the sensitive area of the Touch Panel.<br><Procedure><br>Sequentially touch the four points marked with + on the screen as instructed by the arrow. |
| Total Clear | Clears all of the electronic counters and Copy Track-related data.<br>Yes / **NO** |
| Marketing Area | Selects the settings for the fixed zoom ratios, paper sizes, and others according to the marketing area.<br>**MJ** / MC / MH / Others |
| Image Data Clear | Clears the image data stored in file memory of the MFB Board.<br>Yes / **NO** |
| FAX Set Clear | Clears the fax-related settings.<br>✱ Two or more items can be selected.<br>Own Setting, The Address, Transmission Manage, Soft Switch: Yes / **NO** |
| Date Time Set | Sets the time-of-day and date. |
| Trouble Reset | Resets all malfunctions including the Fusing ones (C05XX).<br>✱ Malfunctions other than Fusing ones can be reset by turning OFF and ON the Power Switch and opening and closing the Side Cover. |

# Di250

# DIS/REASSEMBLY, ADJUSTMENT

MINOLTA

18605

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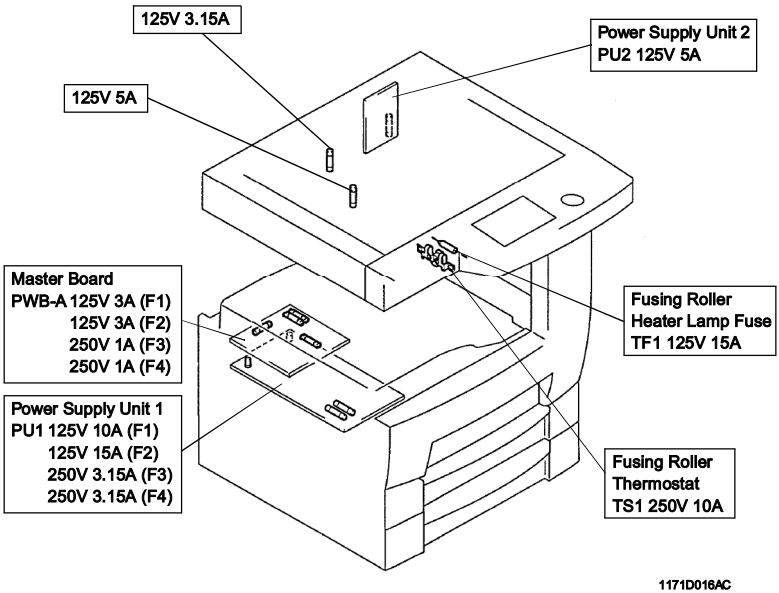
# 1 SERVICE INSTRUCTIONS

## 1-1. IDENTIFICATION OF FUSES AND CIRCUIT BREAKERS




## 1-2. PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- The laser used in this copier is a semiconductor laser having the following specifications.

| | |
|---|---|
| Max. power: | 5mW |
| Output wavelength: | 770~80nm |

- When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
- When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the copier OFF.
- If the job requires that the copier be left ON, take off your watch and ring and wear laser protective goggles.
- A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.
- The printerhead is not maintainable in the field. It is to be replaced as an assembly including the control board. Never, therefore, attempt to remove the laser diode or adjust trimmers on the control board.

## 1-3. INSTRUCTIONS FOR HANDLING THE PWBs WITH MOS ICs

**The following precautions must be observed when handling P.W. Boards with MOS (Metal Oxide Semiconductor) ICs.**

**During Transportation/Storage:**
- During transportation or when in storage, new P.W. Boards must not be indiscriminately removed from their protective conductive bags.
- Do not store or place P.W. Boards in a location exposed to direct sunlight.
- When it becomes absolutely necessary to remove a Board from its conductive bag or case, always place it on its conductive mat in an area as free as possible from static electricity.
- Do not touch the pins of the ICs with your bare hands.

**During Replacement:**
- Before unplugging connectors from the P.W. Boards, make sure that the power cord has been unplugged from the outlet.
- When removing a Board from its conductive bag or conductive case, do not touch the pins of the ICs or the printed pattern. Place it in position by holding only the edges of the Board.
- Before plugging connectors into the Board, make sure that the power cord has been unplugged from the power outlet.

**During Inspection:**
- Avoid checking the IC directly with a multimeter; use connectors on the Board.
- Never create a closed circuit across IC pins with a metal tool.
- When it is absolutely necessary to touch the ICs and other electrical components on the PW Board, be sure to ground your body.

## 1-4. HANDLING OF THE IMAGING CARTRIDGE

**During Transportation/Storage:**
- Use the specified carton whenever moving or storing the Imaging Cartridge.
- The storage temperature is in the range between –20°C and +40°C.
- In summer, avoid leaving the Imaging Cartridge in a car for a long time.

**Handling:**
- Ensure that the correct Imaging Cartridge is used.
- Store the Imaging Cartridge in a site that is not exposed to direct sunlight.

**Precautionary Information on the PC Drum Inside the Imaging Cartridge:**
- The PC Drum exhibits greatest light fatigue after being exposed to strong light over an extended period of time. Never, therefore, expose it to direct sunlight.
- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not apply chemicals to the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

## 1-5. PARTS WHICH MUST NOT BE TOUCHED

### (1) Red painted Screws

**Purpose of Application of Red Paint**
Red painted screws show that the assembly or unit secured can only be adjusted or set at the factory and should not be readjusted, set, or removed in the field.

Note that when two or more screws are used on the part in questions, only one representative screw may be marked with red paint.

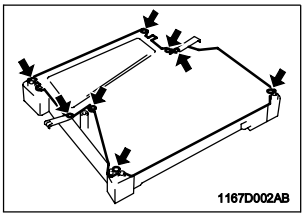
### (2) Variable Resistors on Board

Do not turn the variable resistors on boards for which no adjusting instructions are given in "ADJUSTMENT."

### (3) Other Screws

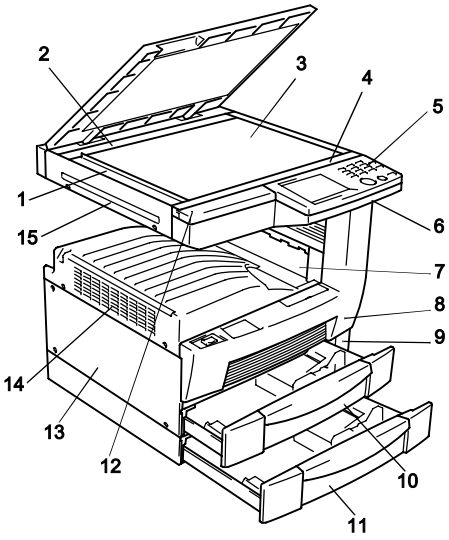
Although not marked with red paint, the following screws must not be loosened or readjusted.

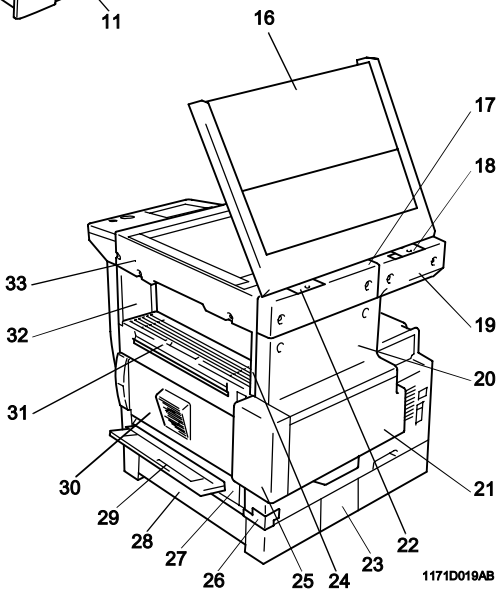
8 screws on the PH Unit Cover



# 2 DISASSEMBLY/REASSEMBLY

## 2-1. DOORS, COVERS, AND EXTERIOR PARTS: IDENTIFICATION AND REMOVAL PROCEDURES



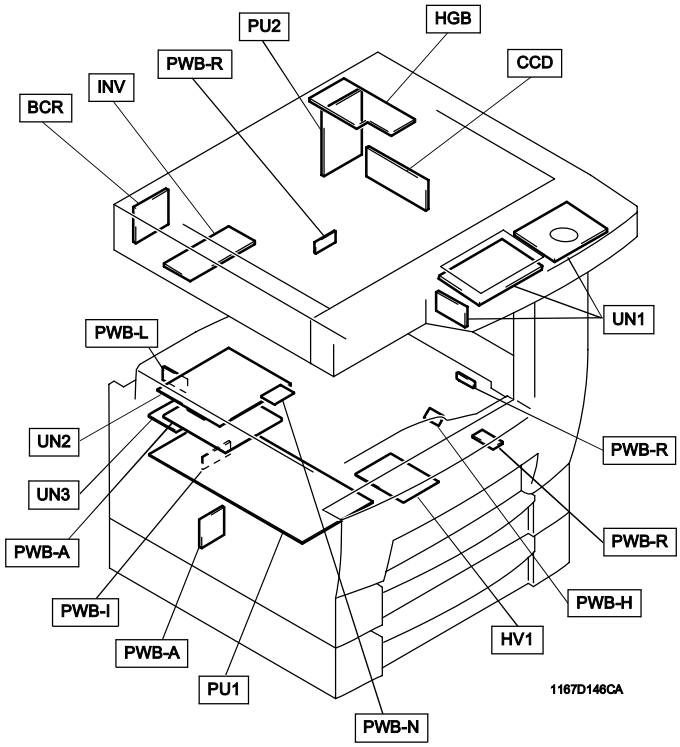



| No. | Part Name | Removal Procedure |
|---|---|---|
| 1 | ADF Glass Assy. | Remove No. 2, 4. → Remove two holding brackets. → Remove two screw caps. → Remove two screws that secure the ADF Glass Assy. |
| 2 | Rear Holding Bracket | Remove No. 17, 18. → Remove two screw caps. → Remove two screws that secure the Rear Holding Bracket. |
| 3 | Original Glass | Remove No. 4. → Remove two holding brackets. |
| 4 | Front Holding Bracket | Remove two screw caps. → Remove two screws that secure the Front Holding Bracket. |
| 5 | Control Panel | Remove No. 8. → Remove No. 6. → Remove No. 4. → Remove No. 12. → Remove five screws that secure the control panel and unplug one connector. |
| 6 | Front Upper Cover | Remove No. 8. → Remove No. 12. → Remove six screws that secure the Front Upper Cover. |
| 7 | Exit Lower Cover | Remove No. 32. → Remove No. 24. → Unhook the two tabs of the Exit Lower Cover and remove the Exit Lower Cover. |
| 8 | Front Cover | Slide out No. 10. → Open No. 25. → Remove three screws that secure the Front Cover. |
| 9 | LED Cover | Slide out No. 10. → Remove one screw that secure the LED Cover. |
| 10 | MP Cassette | Slide out the MP Cassette. → Pushing the tab on the right rail, pull out the cassette. |
| 11 | 500-Sheet Cassette | Slide out the 500-Sheet Cassette. → Pushing the tabs on both the right and left rails, pull out the cassette. |
| 12 | Upper Front Left Cover | Remove No. 4. → Remove two screws that secure the Upper Front Left Cover. |
| 13 | Left Cover | Remove six screws that secure the Left Cover. |
| 14 | Upper Cover | Remove two screws that secure the Upper Cover. |
| 15 | Left IR Cover | Remove two screws that secure the Left IR Cover. |
| 16 | Original Cover | ——— |
| 17 | Rear Right IR Cover | Remove No. 22. → Remove No. 19. → Remove two screws that secure the Rear Right IR Cover. |
| 18 | Left Hinge Cover | Remove one screw that secure the Left Hinge Cover. |
| 19 | Rear Left IR Cover | Remove No. 17. → Remove two screws that secure the Rear Left IR Cover. |
| 20 | Rear Upper Cover | Remove No. 21. → Remove No. 17. → Remove No. 19. → Remove four screws that secure Rear Upper Cover. |
| 21 | Rear Lower Cover | Remove No. 26. → Remove No. 25. → Open No. 30. → Open No. 31. → Remove five screws that secure the Rear Lower Cover. |
| 22 | Right Hinge Cover | Remove one screw that secure the Right Hinge Cover. |
| 23 | Connector Cover | Remove one screw that secure the Connector Cover. |
| 24 | Rear Inside Cover | Remove No. 22. → Remove three screws that secure the Rear Inside Cover. |

| No. | Part Name | Removal Procedure |
|---|---|---|
| 25 | Toner Bottle Cover | Open the Toner Bottle Cover. → Unhook the dowels at four places of the Toner Bottle Cover. |
| 26 | Harness Cover | Remove one screw that secure the Harness Cover. |
| 27 | Right Lower Cover | Remove one screw that secure the Right Lower Cover. |
| 28 | 500-Sheet Cassette Side Cover | Open the Side Cover. → Slide the Side Cover to the front and, at the same time, pull the rear side out of the frame. |
| 29 | Manual Bypass Tray | Remove No. 26. → Unplug one connector. → Remove three screws that secure the Manual Bypass Tray. |
| 30 | Side Cover | ——— |
| 31 | Fusing Unit | See D-26. |
| 32 | Front Inside Cover | Remove No. 8. → Remove No. 31. → Remove two screws that secure the Front Inside Cover. |
| 33 | Right IR Cover | Remove three screws that secure the Right IR Cover. |

## 2-2. REMOVAL OF CIRCUIT BOARDS AND OTHER ELECTRICAL COMPOMENTS

- When removing a circuit board or other electrical component, refer to "PRECAUTIONS FOR HANDLING THE PWBs" contained in SWITCHES ON PWBs and follow the corresponding removal procedures.
- The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.
- Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.

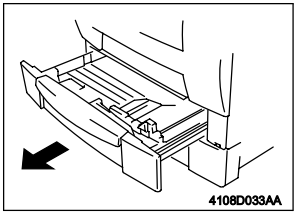


| Symbol | Part Name | Removal Procedure |
|---|---|---|
| PWB-A | Master Board | Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → Remove two screws and the MFB Box Assy. → PWB-A |
| PWB-A | Cassette Main Board | Remove the Connector Cover. → PWB-A |
| PWB-H | Double Feed Detecting Board | Slide out the MP Cassette. → Remove one screw and the PWB-H Mounting Bracket Assy. → PWB-H |
| PWB-I | Paper Size Detecting Board | Remove the Harness Cover. → Remove the Rear Cover. → Remove two screws and the PW Board Cover. → PWB-I |
| PWB-L | PPM Switching Board | Remove the Harness Cover. → Remove the Rear Cover. → Remove one screw and the PWB-L Mounting Bracket Assy. → PWB-L |
| PWB-N | RAM Board | Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → PWB-N |
| PWB-R | Fuser Frame Register Board | Remove the Fusing Unit. → Remove the rear lamp cover. → PWB-R |
| PWB-R | Pre-Transfer Guide Plate Register Board 1 | Remove the Vertical Transport Unit. → Remove two screws and two ground plates. → PWB-R |
| PWB-R | Pre-Transfer Guide Plate Register Board 2 | Open the Side Cover. → Remove the Imaging Cartridge. → Remove one screw and the PW Board Cover. → PWB-R |
| PU1 | Power Supply Board 1 | Remove the Harness Cover. → Remove the Rear Cover. → Remove the Left Cover. → Remove five screws and the Reinforcement Bracket. → Remove three screws and the PU1 Mounting Bracket Assy. → PU1 |
| PU2 | Power Supply Board 2 | Remove the Harness Cover. → Remove the Rear Cover. → PU2 |
| HV1 | High Voltage Unit | Open the Side Cover. → Remove the Imaging Cartridge. → Remove two screws and the HV1 Cover. → HV1 |
| INV | Inverter Board | Remove the Original Glass. → INV |
| BCR | BCR Board | Remove the Rear Left IR Cover. → Remove three screws and the Harness Cover. → BCR |
| HGB | HGB Board | Remove the Original Glass. → Remove the Right IR Cover. → Remove the Optical Cover. → Remove the Rear Lower Cover. → Remove the Rear Upper Cover. → Remove the Shielding Plate. (U.S.A. and Canada only) → Remove one screw and the Harness Cover. → Unplug nine connectors. → Remove five screws and the HGB Mounting Bracket Assy. → HGB |
| CCD | CCD Board | See D-15. |

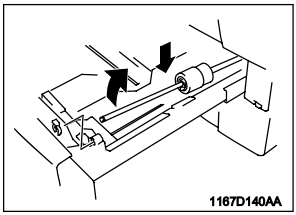
| Symbol | Part Name | Removal Procedure |
|---|---|---|
| UN2 | MFB Board | Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → UN2 |
| UN3 | Polygon Motor Drive Board | Remove the PH Unit. → UN3 |

## 2-3. PAPER TAKE-UP/TRANSPORT SECTION

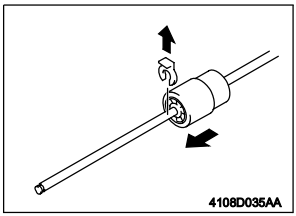
### (1) Replacement of the Paper Take-Up Roll




1. Slide out the MP Cassette.

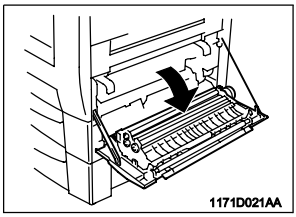



2. Lock the Paper Lifting Plate.
3. Snap off one C-clip of the Paper Take-Up Roll Assy.
4. Slide the Paper Take-Up Roll Assy to the rear so that it can be pulled off the bushing at the front.

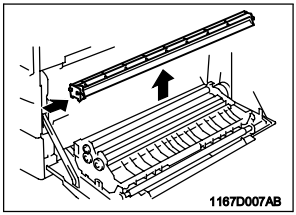



5. Snap off one C-clip and remove and replace the Paper Take-Up Roll.

### (2) Replacement of the Paper Dust Remover

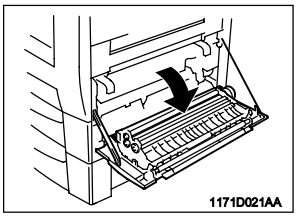



1. Open the Side Cover.

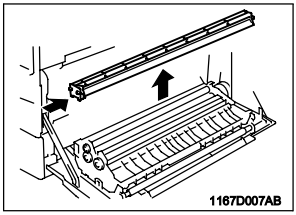



2. Remove the Paper Dust Remover and replace it.

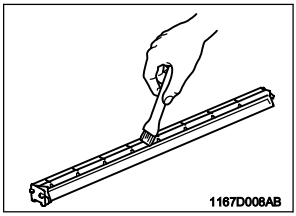
### (3) Cleaning of the Paper Dust Remover




1. Open the Side Cover.

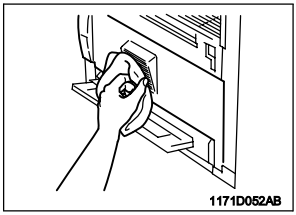



2. Remove the Paper Dust Remover.




3. Using a brush, whisk dust and dirt off the Paper Dust Remover.

### (4) Cleaning of the Side Cover

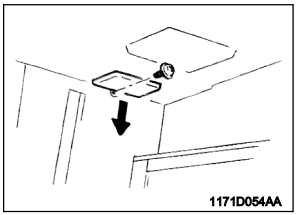



Using a soft cloth dampened with alcohol, wipe the Side Cover.

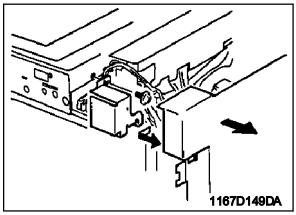
## 2-4. OPTICAL SECTION

### (1) Removal of the IR Unit

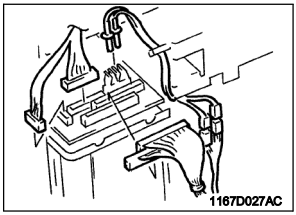
1. Remove the Original Cover, Front Holding Bracket, Upper Front Left Cover, Front Cover, Front Upper Cover, Rear Right IR Cover, Rear Left IR Cover, Rear Lower Cover, Rear Upper Cover, and Front Inside Cover.



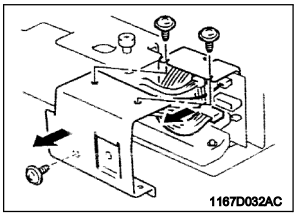

2. Remove one screw and the Motor Cover.



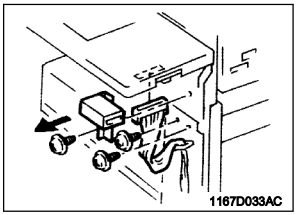

3. Remove the Shielding Plate. (U.S.A. and Canada only)
4. Remove one screw and the Harness Cover.



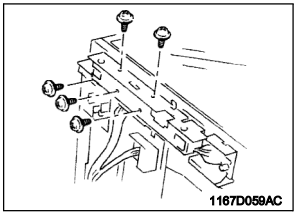

5. Unplug eight connectors of the HGB Board.



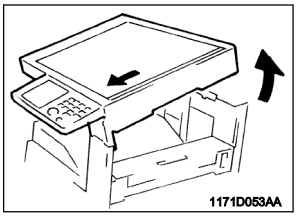

6. Remove three screws and the Harness Cover.
7. Unplug one connector of the BCR Board.




8. Remove one screw and the Total Counter Mounting Bracket Assy.
9. Unplug one connector of the Control Panel.
10. Remove two screws that secure the front end of the frame.




11. Remove five screws that secure the rear end of the frame.




12. Raise the rear end of the IR Unit and pull the unit out toward front.

### (2) Removal of the PH Unit

---

*NOTES*

- *Do not place the PH Unit upside down or subject it to excessive shock.*
- *Replace the PH Unit as one unit.*
- *NEVER attempt to disassemble or adjust the PH Unit.*
- *Whenever the PH Unit has been removed, make the following adjustments: Edge Erase, Registration (CD, FD) (Printer), Registration (IR).*

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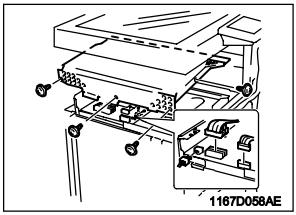
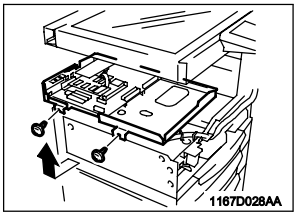
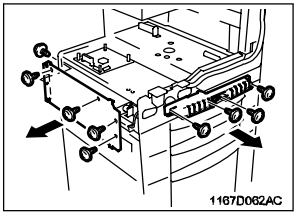


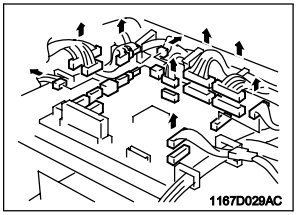

1. Remove the Upper Cover, Front Cover, Left Cover, and Rear Cover.
2. Remove four screws and the MFB Box Cover.
3. Unplug five connectors of the MFB Board.



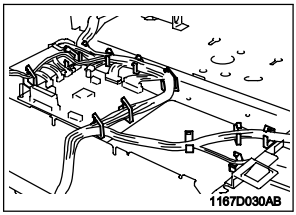

4. Remove two screws and the MFB Box Assy.



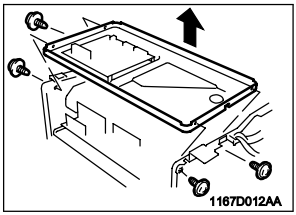

5. Remove five screws and the Reinforcement Bracket.
6. Remove four screws and the handle.




7. Unplug all connectors (13) from Master Board PWB-A.

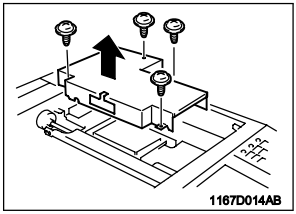



8. Remove the harness from all cord clamps (12) on the PH Base Plate.



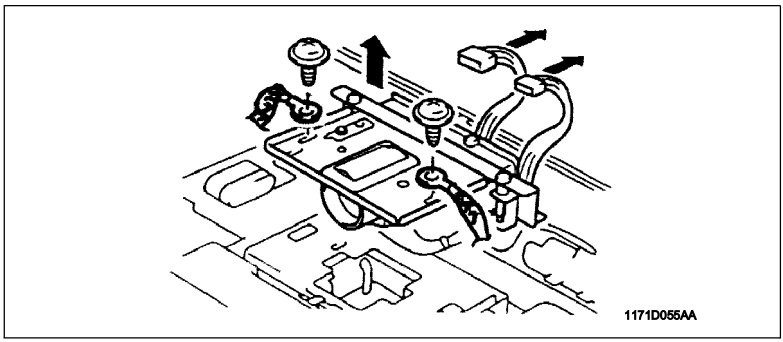

9. Remove four screws and the PH Unit.

### (3) Removal of the CCD Unit




1. Remove the Original Glass.
2. Remove four screws and the Cover.

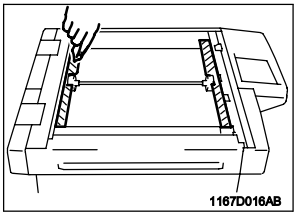
3. Unplug two connectors of the CCD Unit.
4. Remove two screws and the CCD Unit.




*NOTES*

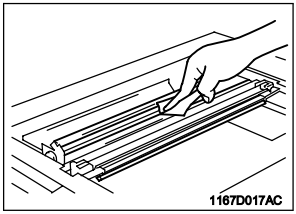
1. When removing the CCD Unit, remove only those screws and parts that are specified. (Remove the CCD Unit as one unit.)
2. Whenever the CCD Unit has been replaced, make the following adjustment: FD of Zoom Adjust (IR).

### (4) Cleaning of the Scanner Rails/Bushings



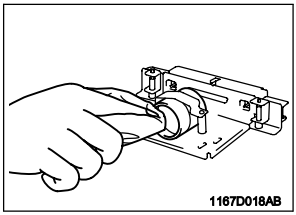

1. Remove the Original Glass.
2. Using a soft cloth, wipe clean the Scanner Rails and Bushings.

**(5) Cleaning of the Mirrors**



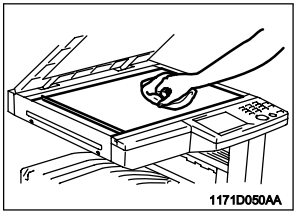

1. Remove the Original Glass.
2. Wipe clean the Mirrors with a soft cloth.

**(6) Cleaning of the Lens**




1. Remove the CCD Unit.
2. Wipe clean the Lens with a soft cloth.

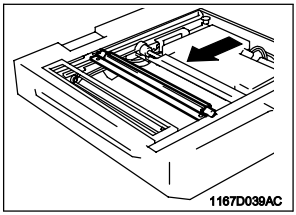
**(7) Cleaning of the Original Glass**



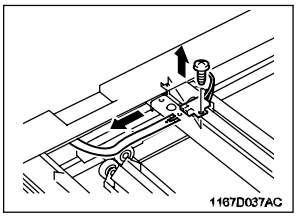

Wipe clean the Original Glass with a soft cloth.

**(8) Removal of the Scanner**

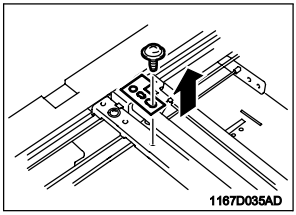
1. Remove the Original Glass.
2. Remove the Rear Holding Bracket.



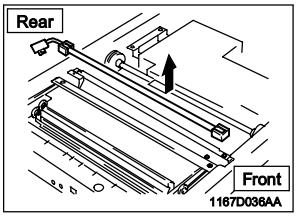

3. Slide the Scanner to the position shown.



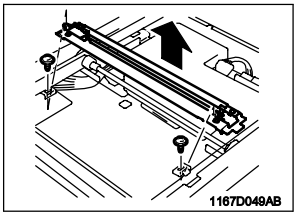

4. Remove one screw and unplug the connector of the Exposure Lamp.
5. Remove the flat cable of the Exposure Lamp.




6. Remove one screw and the Lamp Fixing Bracket.



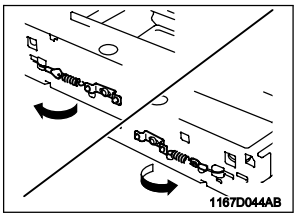

7. Slide the Exposure Lamp to the front and remove it.



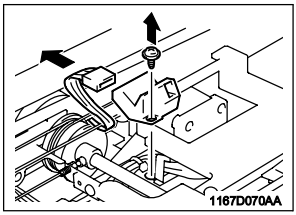

8. Remove two screws and the Scanner.

**(9) Removal of the Scanner Drive Cables**

1. Remove the Original Glass and ADF Glass Assy.
2. Remove the Left IR Cover.
3. Remove the Scanner.

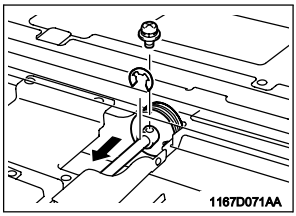



4. Unhook the spring of the cable on the hook side, one each at the front and in the rear.

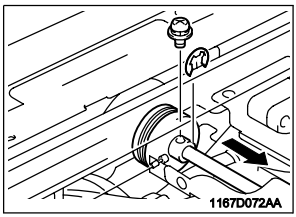



5. Remove one screw and the Original Size Detection Sensor.

✱ Inch Areas Option.



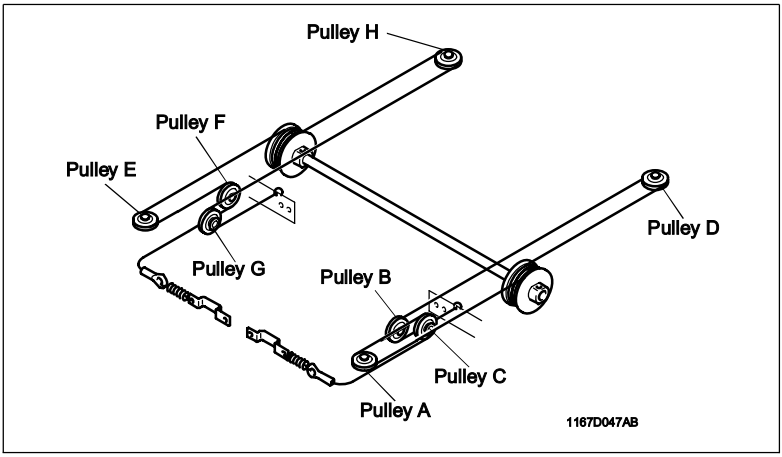

6. Snap off one E-ring and remove one mounting screw from the front pulley and slide the pulley to the rear.

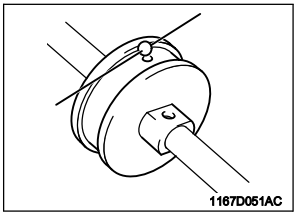



7. Snap off one E-ring and remove one mounting screw from the rear pulley and slide the pulley to the front.

8. Remove the Scanner Drive Cable, hook end first.

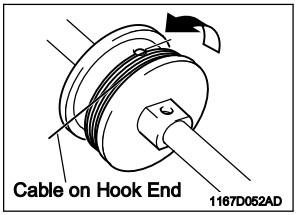
**(10) Winding of the Scanner Drive Cables**



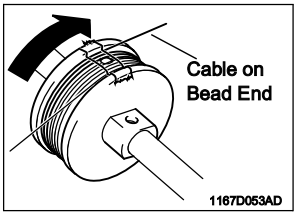




Front

1. Position the round bead of the Scanner Drive Cable in the pulley as shown.

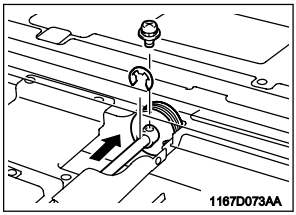



2. Wind the hook end of the Scanner Drive Cable two turns counterclockwise from the rear side to the front.

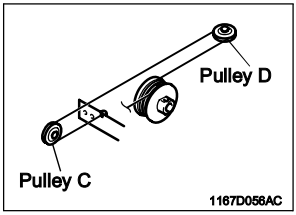



3. Wind the bead end of the cable four turns clockwise from the front to the rear. Then, secure the cable with tape.

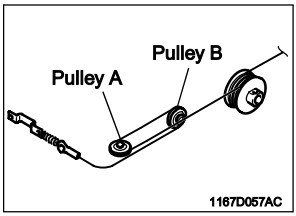
***NOTE***
*Make sure that no part of the cable rides on the other.*



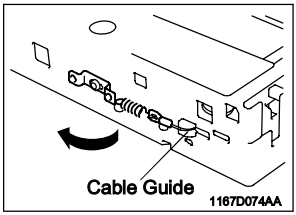

4. Slide the pulley to the front and install one mounting screw and one E-ring.



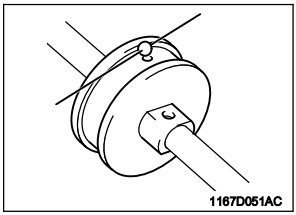

5. Wind the bead end of the cable around pulley D and pulley C, then hook the bead onto the Adjustable Anchor.




6. Wind the hook end of the cable around pulley A and pulley B.

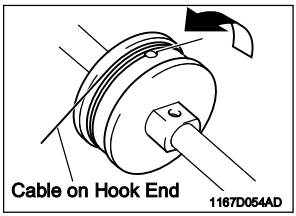



7. Fit the hook end of the cable into the groove in the Cable Guide and hook the spring.

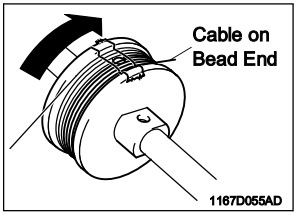



Rear

8. Position the round bead of the Scanner Drive Cable in the pulley as shown.

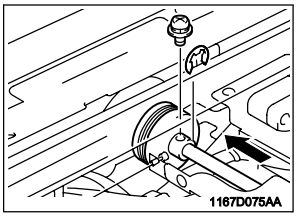



9. Wind the hook end of the cable two turns counter-clockwise from the front to the rear.

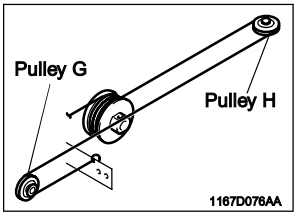



10. Wind the bead end of the cable four turns clockwise from the rear to the front. Then, secure the cable with tape.

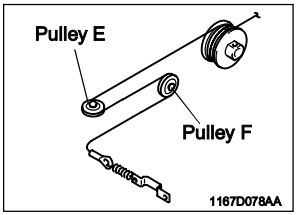
***NOTE***
*Make sure that no part of the cable rides on the other.*



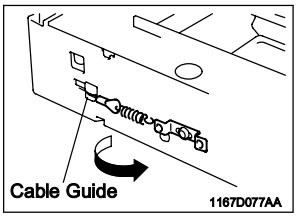

11. Slide the pulley toward the rear and install one mounting screw and one E-ring.




12. Wind the bead end of the cable around pulley H and pulley G and hook the bead onto the Adjustable Anchor.




13. Wind the hook end of the cable around pulley E and pulley F.




14. Fit the hook end of the cable into the groove in the Cable Guide and hook the spring.

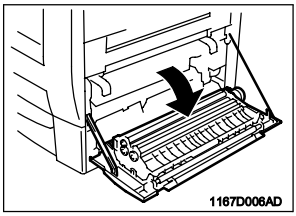
15. Peel off the tape from the pulleys at the front and rear.
16. Mount the Scanner.
17. Mount the Original Size Detection Sensor.
18. Reinstall the Left IR Cover.
19. Reinstall the Original Glass and ADF Glass Assy.
20. Perform the Focus-Positioning of the Scanner and 2nd/3rd Mirrors Carriage. (For details, see ADJUSTMENT.)

***NOTE***

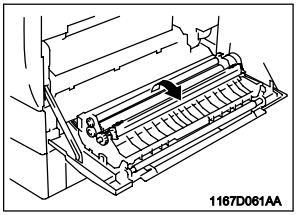
*Whenever the Scanner Drive Cables have been removed, be sure to make the following adjustment: CD of Zoom Adjust (IR).*

## 2-5. IMAGE TRANSFER SECTION

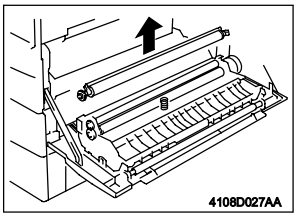
### (1) Removal of the Image Transfer Roller




1. Open the Side Cover.



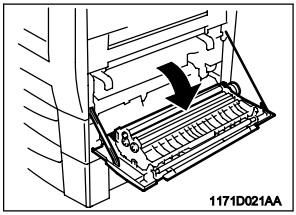

2. Raise the Image Transfer Guide Plate.



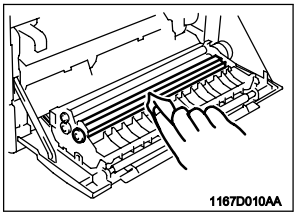

3. Remove the Image Transfer Roller and replace it.

*NOTE*
*Do not touch the surface of the Image Transfer Roller directly with bare hands.*

### (2) Cleaning of the Pre-Image Transfer Guide Plate




1. Open the Side Cover.

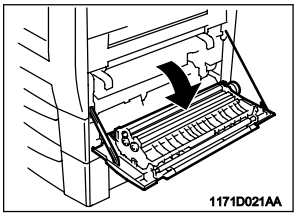



2. **Using a soft cloth dampened with alcohol, wipe the Pre-Image Transfer Guide Plate.**

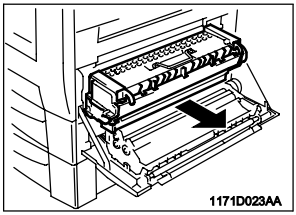
***NOTE***
*Make sure the alcohol does not touch the surface of the Image Transfer Roller.*

## 2-6. DEVELOPING SECTION

### (1) Removal of the Imaging Cartridge




1. Open the Side Cover.




2. Holding onto the green handles, slide the Imaging Cartridge part of the way out.
3. Then grasp the handle on top of the cartridge and pull the cartridge out.

---

***NOTE***

*When installing the Imaging Cartridge, push it all the way into the machine.*
*If the cartridge is not properly installed, the PC Drum protective shutter of the cartridge may not be opened or may even be damaged.*

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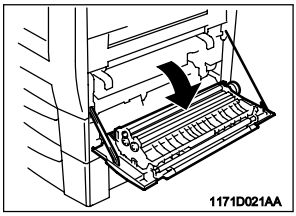
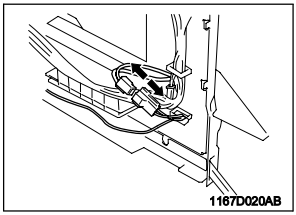
## 2-7. FUSING SECTION

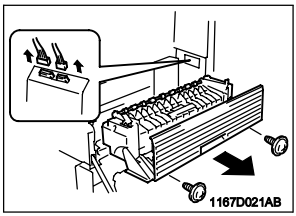
### (1) Removal of the Fusing Unit




1. Open the Side Cover.

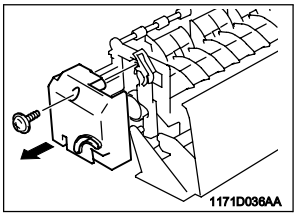



2. Remove the Front Cover.
3. Unplug one connector at the front.

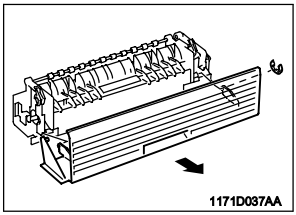



4. Open the Exit Cover and unplug two connectors in the rear.
5. Close the Exit Cover and remove two screws and the Fusing Unit.

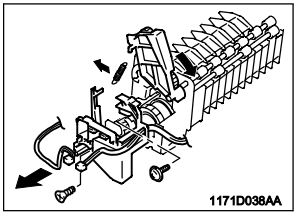
### (2) Removal of the Fusing Roller Heater Lamp, Fusing Right Roller, Fusing Left Roller, Fusing Roller Thermistor, Fusing Roller Thermostat, and Fusing Roller Heater Lamp Fuse



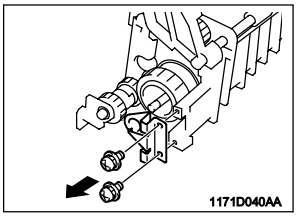

1. Open the Exit Cover.
2. Remove one screw and the Fusing Front Cover.



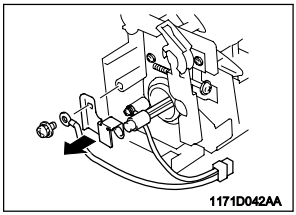

3. Snap off one E-ring and remove the Exit Cover.



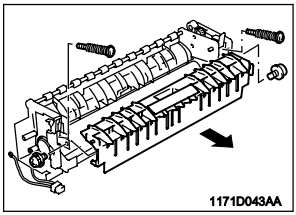

4. Unhook one spring to free the Idle Lever.
5. Remove two harnesses.
6. Remove two screws and the Rear Cover.



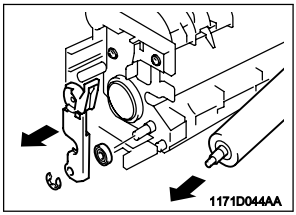

7. Remove two screws and the rear Lamp Holder.



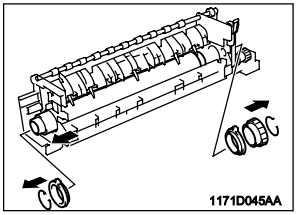

8. Remove one screw and the front Lamp Holder.
9. Remove the Fusing Roller Heater Lamp.



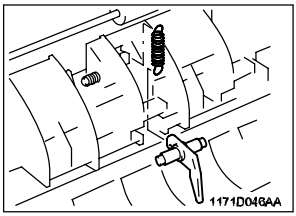

10. Remove two screws and the Fusing Rear Guide Assy.
11. Remove two pressure springs.



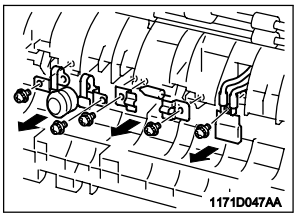

12. Snap off one E-ring and remove the front Misfeed Clearing Lever Assy and bearing.
13. Remove the Fusing Right Roller.




14. Snap off two retaining rings.
15. Remove one gear and two bushings.
16. Remove the Fusing Left Roller.




***NOTE***
*When the Fusing Left Roller is removed, it can cause the spring to come off the Separator Finger. After the Fusing Left Roller has later been reinstalled, be sure to hook the spring onto the Separator Finger.*

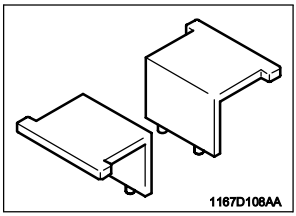



17. Remove one screw and the Fusing Roller Thermistor.
18. Remove two screws and the Fusing Roller Heater Lamp Fuse.
19. Remove two screws and the Fusing Roller Thermostat.

# 3 ADJUSTMENT

## 3-1. ADJUSTMENT JIGS AND TOOLS USED

1. Scanner/Mirrors Carriage Positioning Jigs

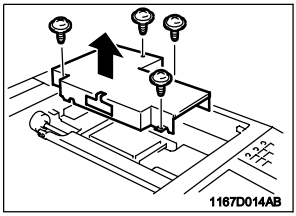



## 3-2. ADJUSTMENT REQUIREMENT LIST

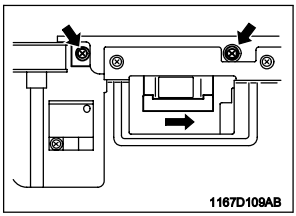
| Adjustment Item | Requirements | Adjustment Point | Ref. Page |
|---|---|---|---|
| Touch Panel Adj. | Automatically adjusted | Control Panel | D-32 |
| Original Size Detecting Sensor Adjustment | ↑ | ↑ | D-33 |
| Loop Adjustment | — | ↑ | D-34 |
| Edge Erase | | | |
| Leading | — | ↑ | D-35 |
| Trailing | — | ↑ | D-36 |
| Right/Left | — | ↑ | D-37 |
| Registration (CD) (Printer) | 10 ± 2.0 mm | ↑ | D-38 |
| Registration (FD) (Printer) | ↑ | ↑ | D-40 |
| Registration (IR) | | | |
| CD | ↑ | ↑ | D-42 |
| FD | ↑ | ↑ | D-44 |
| Zoom Adjust (IR) | | | |
| CD | 200 ±1.0 mm | ↑ | D-46 |
| FD | 300 ±1.5 mm | ↑ | D-48 |
| IR-Erasure Width | — | ↑ | D-50 |

## 3-3. ADJUSTMENT OF BELT TENSION

- Adjustment of the Scanner Motor Timing Belt




1. Remove the Original Glass.
2. Remove four screws and the Cover.




3. Loosen the two screws that secure the Scanner Motor. Using a bar tension gage, pull the motor to the right with a tension of 1000 g ±50 g and, at the same time, tighten the mounting screws.

***NOTE***

*After the adjustment, turn the timing belt to check that the belt teeth are in mesh with the pulley grooves.*

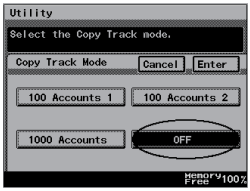
## 3-4. TEST PRINT

*NOTES*

*This function is used to make the following electrical and image adjustments:*

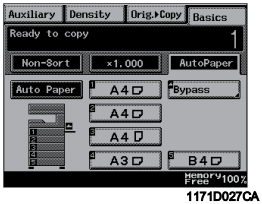
- *Registration (CD) (Printer)*
- *Registration (FD) (Printer)*
- *Registration (IR)*
- *Zoom Adjust (IR)*

◎ Adjustment Procedure



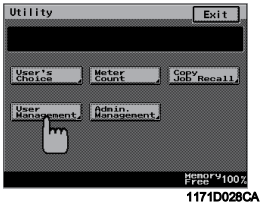

1171D026CA

1. Check that "Copy Track Mode" of "Copy Track" under "Admin. Management" available from "Utility" is "OFF."



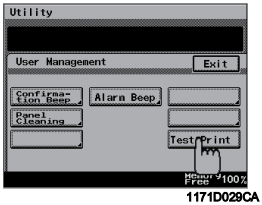

1171D027CA

2. Select the paper source for the test print.




1171D028CA

3. Press the Utility key on the control panel and touch [User Management].




1171D029CA

4. Touch [Test Print] to produce a test pattern.

## 3-5. ELECTRICAL/IMAGE ADJUSTMENT

### (1) Touch Panel Adj.

---

*NOTE*

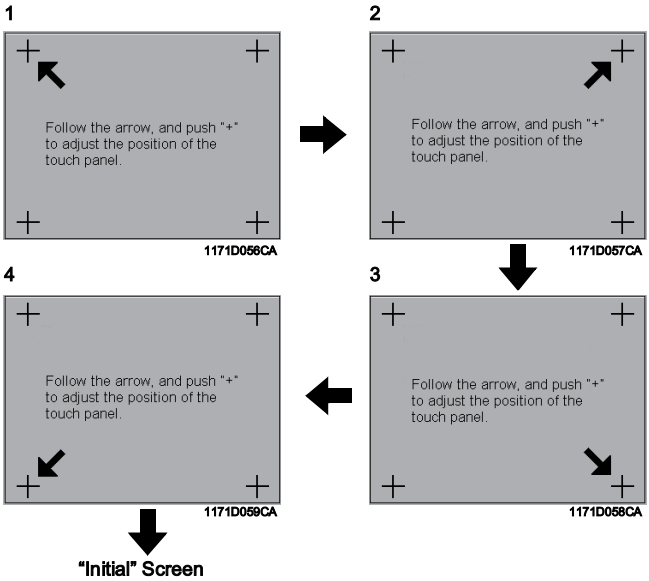
*Make this adjustment after either of the following procedures have been performed:*

- *Memory Clear*
- *Control Panel replacement*

---

◎ Adjustment Procedure

1. Call the Initial mode to the screen. (For details, see SWITCHES ON PWBs, TECH. REP. SETTINGS.)
2. Touch [Touch Panel Adj.].


1
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D056CA
2
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D057CA
3
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D058CA
4
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D059CA
"Initial" Screen

3. Touch + on screen 1.

---

*NOTE*

*At this time, ensure that the very center of "+" is touched using the tip of a ballpoint pen or similar device.*

---

4. Touch + on screen 2.
5. Touch + on screen 3.
6. Touch + on screen 4.

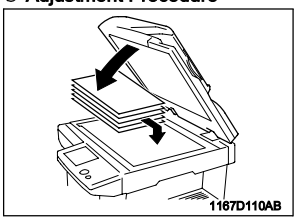
### (2) Original Size Detecting Sensor Adjustment (F7-1)

*NOTE*

*Make this adjustment after any of the following procedures have been performed:*

- *Memory Clear*
- *A faulty original size detection occurs*
- *Replacement of the CCD Unit and Scanner parts (including the Exposure Lamp)*
- *RAM Board replacement*

◎ Adjustment Procedure




1. Stack five sheets of blank A3 or 11" × 17" paper on the Original Glass and lower the Original Cover.
2. Call the Tech. Rep. mode to the screen.
3. Touch [Function] to call the Function menu.
4. Touch F7-1 Original Size Detecting Sensor Adjustment.
5. Press the Start key to run the Original Size Detecting Sensor Adjustment function.

*NOTE*

*The Start key remains lit up orange while this function is being run and lights up green as soon as the sequence is completed.*

### (3) Loop Adjustment

**Requirement**

Adjust so that a correct loop is formed before the Synchronizing Rollers when paper is fed through.

| Adjust Mode | Setting Value |
|---|---|
| Loop Adjustment | -5 to +5 |

*NOTE*

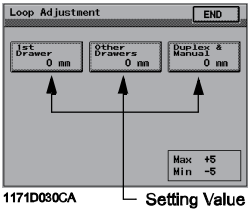
*This adjustment is to be made when any of the following symptoms occurs: variations in the amount of print leading edge void, paper skew, and misfeed.*

◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Loop Adjustment] to enter the Loop Adjustment mode.
4. Select the paper source for which the adjustment is to be made.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**

Change the setting value as necessary until there are no variations in the amount of void image along the leading edge, skewed feeding, dog-ear, or misfeed.



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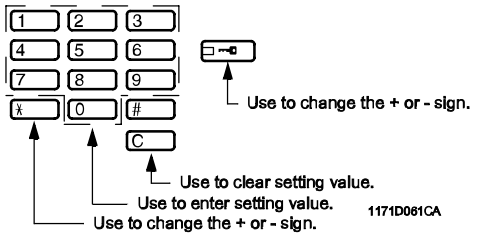

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7. Touch the [END] key to validate the setting value.

**Caution**

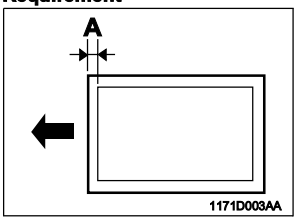
Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

8. Perform the same steps to adjust for the other paper sources.

### (4) Edge Erase

1. Leading

**Requirement**




Adjust so that the erase width on the leading edge falls within the range of 0 to 5 mm.

| Adjust Mode | Setting Range |
|---|---|
| Edge Erase/Leading | 0 to 5 |

*NOTE*

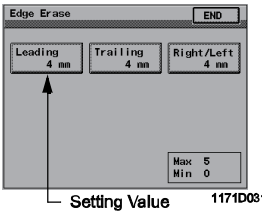
*This adjustment must be made when the PH Unit has been replaced and after Registration (CD/FD) (Printer) has been made.*

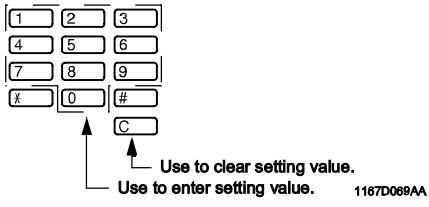
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Leading] to enter the Leading Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**

To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.



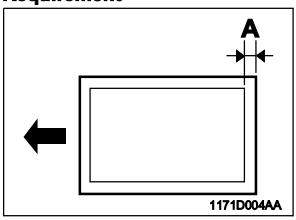

6. Touch the [END] key to validate the setting value.

**Caution**

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. Trailing

**Requirement**




Adjust so that the erase width on the trailing edge falls within the range of 0 to 5 mm.

| Adjust Mode | Setting Range |
|---|---|
| Edge Erase/Trailing | 0 to 5 |

*NOTE*

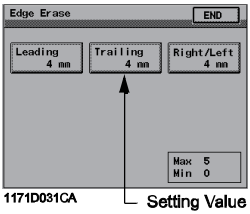
*This adjustment must be made when the PH Unit has been replaced and after Registration (CD/FD) (Printer) has been made.*

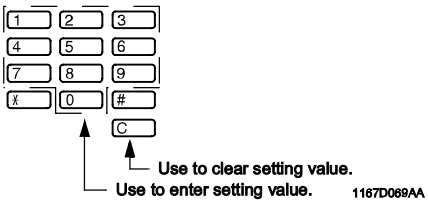
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Trailing] to enter the Trailing Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**

To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.



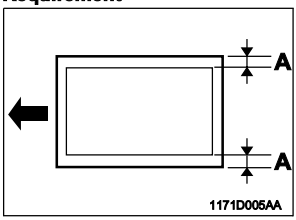

6. Touch the [END] key to validate the setting value.

**Caution**

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

3. Right/Left

**Requirement**




Adjust so that the erase width on the right/left edge falls within the range of 0 to 5 mm.

| Adjust Mode | Setting Range |
|---|---|
| Edge Erase/Right/Left | 0 to 5 |

*NOTE*

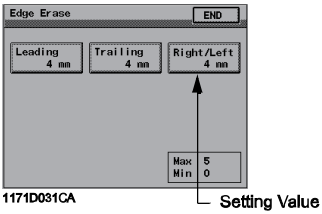
*This adjustment must be made when the PH Unit has been replaced and after Registration (CD) (Printer) have been made.*

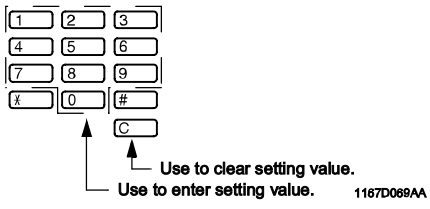
◎ Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Right/Left] to enter the Right/Left Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**

To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.



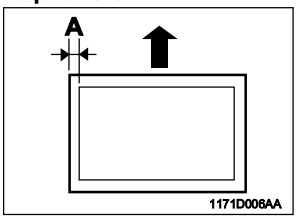

6. Touch the [END] key to validate the setting value.

**Caution**

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

### (5) Registration (CD) (Printer)

**Requirement**




Adjust so that width A on the test pattern output falls within the following range.

| Specification | Adjust Mode | Setting Range |
|---|---|---|
| 1-Sided: 10 ±2.0 mm<br>2-Sided: 10 ±3.0 mm | Registration (CD) | -4.0 to +4.0 |

*NOTE*

*This adjustment must be made when the PH Unit has been replaced and, for 2-sided, after Registration (CD) (Printer) for each paper source for 1-sided and Registration (FD) (Printer) have been made.*

◎ Adjustment Procedure

1. Produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. 1-Sided: Check to see if width A on the test pattern meets the specifications.
   2-Sided: Using the test pattern output as the original, make an ordinary 2-sided copy. Check to see if width A on the second side of the 2-sided copy meets the specifications.

   If width A falls outside the specified range, perform these steps to make the adjustment.

3. Call the Adjust mode to the screen.
4. Touch [Printer] and [Registration (CD)], in that order.
5. Select the paper source for which the adjustment is to be made.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

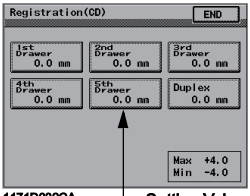
---

**Setting Instructions**

If width A is wider than specifications, make the setting value smaller than the current one. If width A is narrower than specifications, make the setting value greater than the current one.

✱ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.

---



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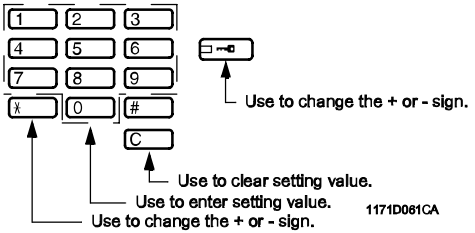


1171D061CA

8. Touch the [END] key to validate the setting value.

---

**Caution**

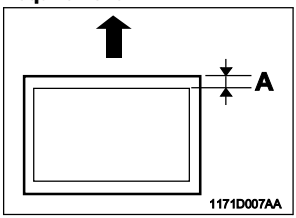
Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

---

9. Perform the same steps to adjust for the other paper sources.

### (6) Registration (FD) (Printer)

**Requirement**




Adjust so that width A on the test pattern output falls within the following range.

| Specification | Adjust Mode | Setting Range |
|---|---|---|
| 10 ±2.0 mm | Registration (FD) | -26 to +26 |

*NOTE*

*This adjustment must be made when the PH Unit has been replaced and after Registration (CD) (Printer) has been made.*

◎ Adjustment Procedure

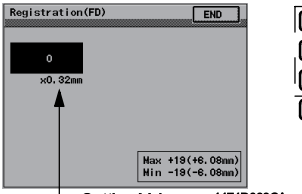
1. Produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Check to see if width A on the test pattern meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

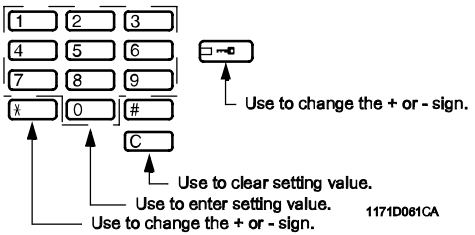
3. Call the Adjust mode to the screen.
4. Touch [Printer] and [Registration (FD)], in that order.
5. Select the paper source for which the adjustment is to be made.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**

If width A is wider than specifications, make the setting value smaller than the current one. If width A is narrower than specifications, make the setting value greater than the current one.

✱ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.




8. Touch the [END] key to validate the setting value.

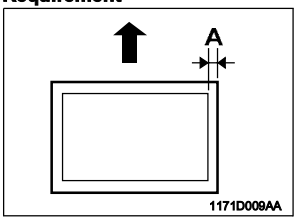
**Caution**

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

**(7) Registration (IR)**

1. CD

**Requirement**




Place the test pattern output after the adjustments of Registration (CD and FD) (Printer) have been completed on the Original Glass and make a copy of it. Adjust so that width A on the test pattern copy falls within the following range.

| Specification | Adjust Mode | Setting Range |
|---|---|---|
| 10 ±2.0 mm | Registration (CD) | -127 to +127 |

*NOTE*

*This adjustment must be made when the PH Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) and CD of Zoom Adjust (IR) have been made.*

◎ Adjustment Procedure

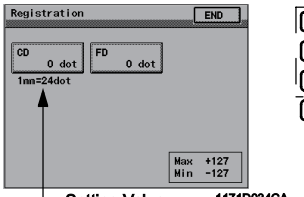
1. After the adjustments of Registration (CD and FD) (Printer) and CD of Zoom Adjust (IR) have been completed, produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Place the test pattern output on the Original Glass and make a copy of it.
3. Check to see if width A on the test pattern copy meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

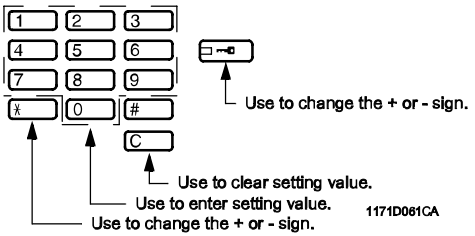
4. Call the Adjust mode to the screen.
5. Touch [IR], [Registration], and [CD], in that order.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**

If width A is wider than specifications, make the setting value smaller than the current one. If width A is narrower than specifications, make the setting value greater than the current one.

* If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.



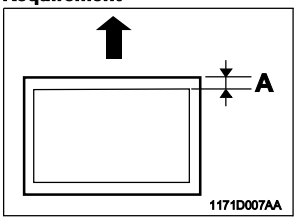

8. Touch the [END] key to validate the setting value.

**Caution**

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. FD

**Requirement**




Place the test pattern output after the adjustments of Registration (CD and FD) (Printer) have been completed on the Original Glass and make a copy of it. Adjust so that width A on the test pattern copy falls within the following range.

| Specification | Adjust Mode | Setting Range |
|---|---|---|
| 10 ±2.0 mm | Registration (FD) | -127 to +127 |

*NOTE*

*This adjustment must be made when the PH Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) and FD of Zoom Adjust (IR) have been made.*

◎ Adjustment Procedure

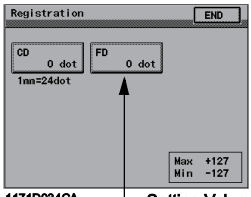
1. After the adjustments of Registration (CD and FD) (Printer) and FD of Zoom Adjust (IR) have been completed, produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Place the test pattern output on the Original Glass and make a copy of it.
3. Check to see if width A on the test pattern copy meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

4. Call the Adjust mode to the screen.
5. Touch [IR], [Registration], and [FD], in that order.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**

If width A is wider than specifications, make the setting value smaller than the current one. If width A is narrower than specifications, make the setting value greater than the current one.

* If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.



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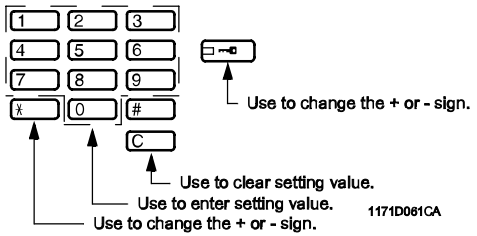

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8. Touch the [END] key to validate the setting value.

**Caution**

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

### (8) Zoom Adjust (IR)

1. CD

**Requirement**

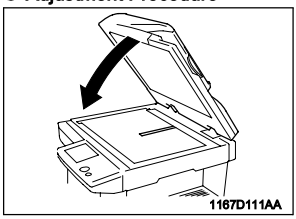
1. The difference should be within ±1.0% of the actual length.
2. Adjust so that the following specifications are satisfied with a scale length of 300 mm.

| Zoom Ratio | Specification | Adjust Mode | Setting Range |
|---|---|---|---|
| Full size (×1.000) | 300 ±3.0 mm | Zoom Adjust (CD) | 0.990 to 1.010 |

*NOTE*

*This adjustment must be made when the Scanner Drive Cables have been replaced and after the adjustments of Registration (CD and FD) (Printer) have been made.*

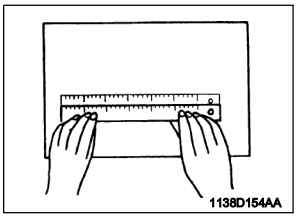
◎ Adjustment Procedure




1. Place a scale in parallel with the Original Width Scale and make a copy. (Note that the scale is perpendicular to the Original Length Scale.)

✱ Use the full size (×1.000) mode and A3 or 11" × 17" paper.

✱ If the scale is of plastic and transparent, place a blank sheet of paper over it.




2. Measure the length of the scale on the copy to find the difference.

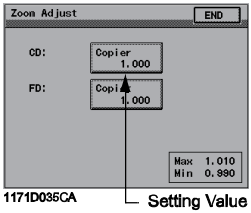
✱ If the difference is outside the specification, adjust by following the procedure shown below.

3. Call the Adjust mode to the screen.
4. Touch [IR], [Zoom Adjust], and [CD], in that order.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**

If the scale on the copy is longer than the actual scale, decrease the setting value.
If the scale on the copy is shorter than the actual scale, increase the setting value.

* If the measurement does not fall within the specifications through one setting, try another setting.



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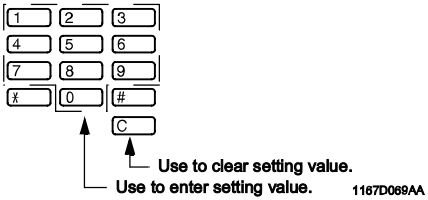


1167D069AA

7. Touch the [END] key to validate the setting value.

**Caution**

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. FD

**Requirement**

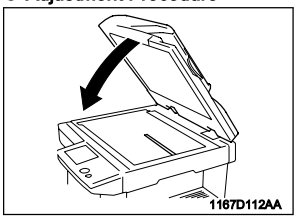
1. The difference should be within ±1.0% of the actual length.
2. Adjust so that the following specifications are satisfied with a scale length of 200 mm.

| Zoom Ratio | Specification | Adjust Mode | Setting Range |
|---|---|---|---|
| Full size (×1.000) | 200 ±2.0 mm | Zoom Adjust (FD) | 0.990 to 1.010 |

*NOTE*

*This adjustment must be made when the CCD Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) have been made.*

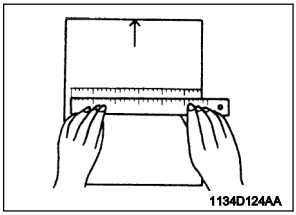
◎ Adjustment Procedure




1. Place a scale in parallel with the Original Length Scale and make a copy.

✱ Use the full size (X1.000) mode and paper with a width of 200 mm or more.

✱ If the scale is of plastic and transparent, place a blank sheet of paper over it.




2. Measure the length of the scale on the copy to find the difference.

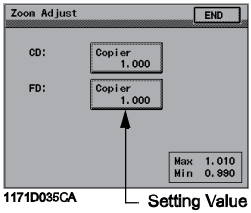
✱ If the difference is outside the specification, adjust by following the procedure shown below.

3. Call the Adjust mode to the screen.
4. Touch [IR], [Zoom Adjust], and [FD], in that order.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**

If the scale on the copy is longer than the actual scale, decrease the setting value.
If the scale on the copy is shorter than the actual scale, increase the setting value.

* If the measurement does not fall within the specifications through one setting, try another setting.



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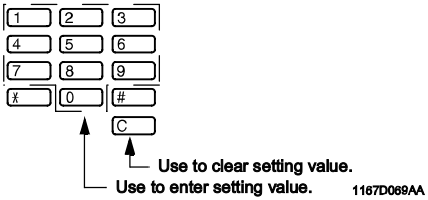


1167D069AA

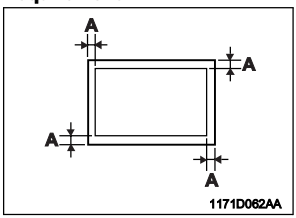
7. Touch the [END] key to validate the setting value.

**Caution**

Be sure to touch the END key before returning to normal operating mode. If the Panel Reset Key is used, the previous setting remains valid.

### (9) IR-Erasure Width

**Requirement**



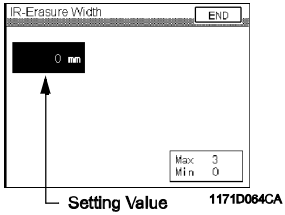

Set so that the erase width along four edges of the paper falls within the range of 0 to 3 mm.

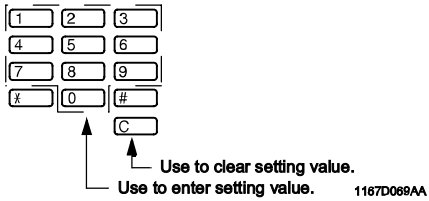
| Adjust Mode | Setting Range |
|---|---|
| IR-Erasure Width | 0 to 3 |

*NOTE*
*This adjustment must be made when a shadow is produced from the Original Scale.*

◎ Adjustment Procedure
1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice].
3. Touch [IR-Erasure Width] to enter the IR-Erasure Width mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**
To make the erase width along four edges of the paper smaller, decrease the setting value.
To make the erase width along four edges of the paper greater, increase the setting value.




6. Touch the [END] key to validate the setting value.

**Caution**
Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

## 3-6. OTHER ADJUSTMENTS

- Focus-Positioning of the Scanner and 2nd/3rd Mirrors Carriage

*NOTE*

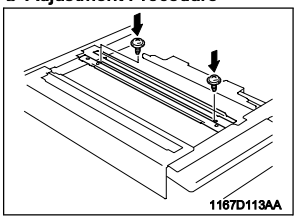
*Make this adjustment after any of the following procedures has been performed:*

- *After the Scanner Drive Cable has been replaced.*
- *When the Scanner Fixing Bracket has been removed from the Scanner Drive Cable.*
- *When the Scanner Drive Cable comes unwound.*

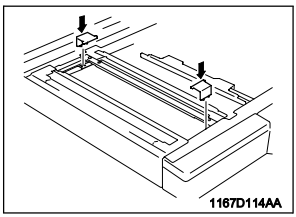
**Requirement**

**With the Scanner fixed to the Scanner Drive Cables, there should be no gap between the Scanner/Mirrors Carriage Positioning Jig and the Scanner and also between the Scanner/ Mirrors Carriage Positioning Jig and the 2nd/3rd Mirrors Carriage.**

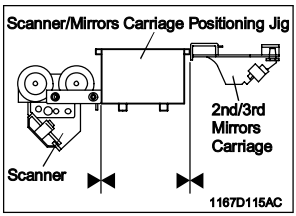
◎ Adjustment Procedure



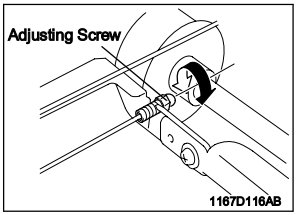

1. Remove the Exposure Lamp. (For details, see steps 1 through 7, (8) Removal of the Scanner, 2-4 OPTICAL SECTION.)
2. Temporarily loosen the set screws of the cable holding plate of the Scanner Drive Cable.




3. Fit the Scanner/Mirrors Carriage Positioning Jigs in the space between the Scanner and 2nd/3rd Mirrors Carriage.



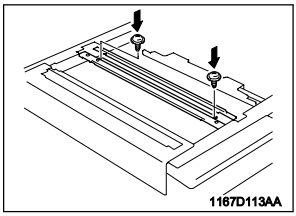

4. Press the Scanner up against the jig and 2nd/3rd Mirrors Carriage and, at the same time, tighten the set screws of the cable holding plate.



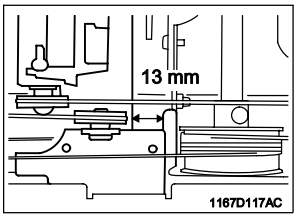

***NOTE***

*If the Scanner does not run parallel with the 2nd/3rd Mirrors Carriage when the Scanner/Mirrors Carriage Positioning Jigs are in position, turn the adjusting screw for the rear Scanner Drive Cable as necessary.*

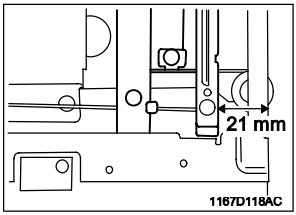
**✱ If the Scanner/Mirrors Carriage Positioning Jigs are not available, follow these steps to make the adjustment.**



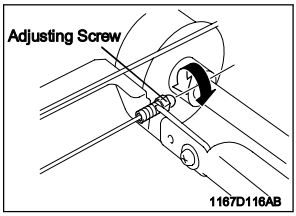

1. **Temporarily loosen the set screws of the cable holding plate of the Scanner Drive Cable.**




2. **Obtain a distance of 13 mm between the 2nd/3rd Mirrors Carriage and rail.**




3. **Secure the Scanner where it is located at a position 21 mm from the right side face.**
4. **Tighten the set screws of the cable holding plate.**

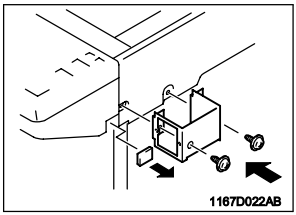



***NOTE***

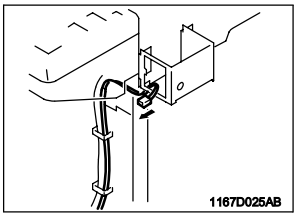
*If the Scanner does not run parallel with the 2nd/3rd Mirrors Carriage, turn the adjusting screw for the rear Scanner Drive Cable as necessary.*

# 4 MISCELLANEOUS

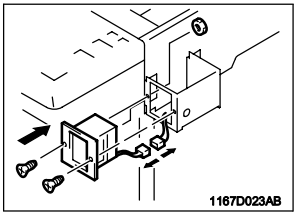
## 4-1. INSTALLATION OF THE KEY COUNTER SOCKET (OPTION)



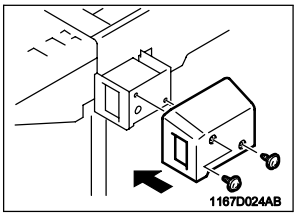

1. Remove the Front Cover.
2. Remove the knockout from the Front Upper Cover.
3. Using two screws, secure the Counter Mounting Bracket.




4. Route the harness of the Key Counter as shown.




5. Connect the Key Counter Socket connector.
6. Using one screw and one screw and nut, secure the counter socket.




7. Using two screws, secure the Key Counter Cover.

***NOTE***

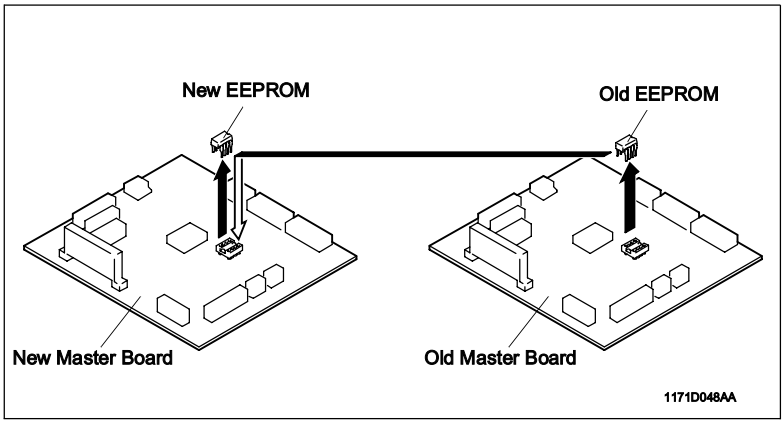
*When the Key Counter Socket is mounted, set to "ON" the "Key Counter" available from the Security mode.*

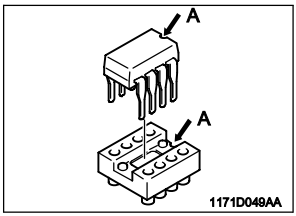
## 4-2. REMOUNTING THE EEPROM (IC3A)

*NOTES*

- *If the Imaging Cartridge is not to be replaced after the Master Board has been replaced with a new one, be sure to remount the EEPROM (IC3A) from the old to new Master Board.*
- *If the Master Board has been replaced with a new one and the EEPROM (IC3A) has not been remounted, be sure to replace the Imaging Cartridge with a new one. Because the EEPROM contains no data in this case, make settings and readjustments as necessary.*

1. **Remove the Master Board. (For details, see 2-2. REMOVAL OF CIRCUIT BOARDS AND OTHER ELECTRICAL COMPONENTS.)**
2. **Demount the EEPROM (IC3A) from the new Master Board.**
3. **Demount the EEPROM (IC3A) from the old Master Board and remount it onto the new Master Board.**




***NOTE***

*Note the alignment notch on the EEPROM (IC3A) when mounting the IC.*

# Di250

# TROUBLESHOOTING

MINOLTA

14413

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# 1 INTRODUCTION

## 1-1. General Precautions

1. When servicing the copier with its covers removed, use utmost care to prevent your hands, clothing, and tools from being caught in revolving parts including the chains and gears. When servicing the copier with the Rear Cover removed, be sure to fit the interlock switch actuating jig in position.
2. Before attempting to replace parts and unplug connectors, make sure that the power cord of the copier has been unplugged from the wall outlet.
3. Never create a closed circuit across connector pins except those specified in the text and on the printed circuit.
4. When creating a closed circuit and measuring a voltage across connector pins specified in the text, be sure to use the green wire (GND).
5. When the user is using a word processor or personal computer from a wall outlet of the same line, take necessary steps to prevent the circuit breaker from opening due to overloads.
6. Keep all disassembled parts in good order and keep tools under control so that none will be lost or damaged.

## 1-2. How to Use This Book

1. If a component on a PWB or any other functional unit including a motor is defective, the text only instructs you to replace the whole PWB or functional unit and does not give troubleshooting procedures applicable within the defective unit.
2. All troubleshooting procedures contained herein assume that there are no breaks in the harnesses and cords and all connectors are plugged into the right positions.
3. For the removal procedures of covers and parts, see DIS/REASSEMBLY, ADJUSTMENT.
4. The troubleshooting procedures are given in the order of greater frequency of trouble or order of operation.
5. The procedures preclude possible malfunctions due to noise and other external causes.

## 1-3. Reading the Text

1. The paper transport failure troubleshooting procedures are given according to the symptom. First identify the location where the paper is present and start the procedure for that particular location. For malfunction troubleshooting, start with step 1 and onward.
2. Make checks in numerical order of steps and, if an item is checked okay, go to the next step.

Pattern 1

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Is--? | YES | Do this. |
| 2 | | ↑ | |

Go to step 2 if you answered No.

Pattern 2

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Is--? | YES | Do this. |
| | | NO | Check that. |
| 2 | | | ↑ |

Go to step 2 if it checks okay.

# 2 I/O CHECK

## 2-1. Controlled Parts Check Procedure

To allow the Tech. Rep. to easily and safely determine whether a particular controlled part is fully operational, this copier provides the following provision: checking the data of the input port of the board IC with the copier in the standby state (including a misfeed, malfunction, and closure failure condition) allows the Tech. Rep. to determine whether signals are properly input to a controlled part.

<Procedure>
1. When a misfeed or malfunction occurs, locate on a circuit diagram accompanying the text the controlled part which is probably defective.
2. Select "I/O Check" from the Tech. Rep. Mode menu screen and then access the screen which contains the controlled part picked out in step 1 above. (See SWITCHES ON PWBs/TECH. REP. MODE.)
3. Check the input port data to determine if a signal is probably input to the controlled part.

<Controlled Part Check Procedure Through Checking Input Port Data>

**Example**
When a paper misfeed occurs in the paper take-up section of the copier, Synchronizing Roller Sensor PC2 is considered to be responsible for it.

<Procedure>
1. Remove the sheet of paper misfed.
2. From the I/O Check list, it is found that the signal input to PC2 is "Timing Roller."
3. Select "I/O Check" from Tech. Rep. Mode and then "Printer." Now, access the screen that contains "Timing Roller."
4. Check that the input port data of "Timing Roller" is "0" (sensor is blocked).
5. Move the PC2 actuator to unblock the sensor.
6. Check at this time that the input port data on the screen changes from "0" to "1."

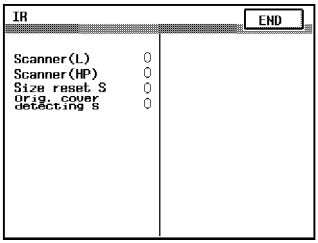
1: PC2 is operational. 0: PC2 is faulty.

## 2-2. I/O Check List

<I/O Check Screens>

- The following screens are only typical and the input data shown does not necessarily represent the actual one.

IR

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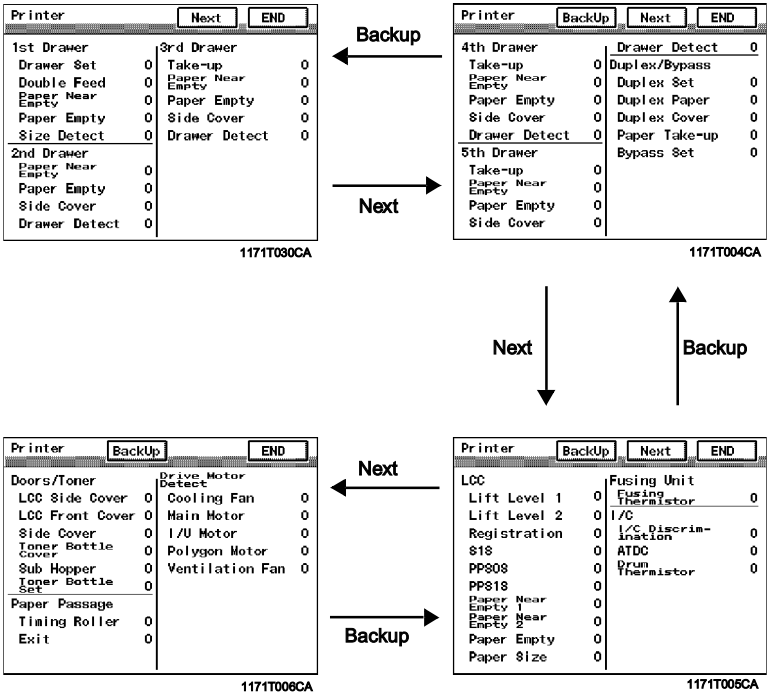
Printer

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1171T006CA

1171T005CA

<I/O Check List>

IR

| Symbol | Panel Display | Parts/Signal Name | Operation Characteristics/Panel Display | | Input Board | IC No. | Port No. | CN/PJ No. |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 0 | | | | |
| PC13 | Scanner (L) | Scanner Home Position Sensor 2 | Blocked | Unblocked | HGB Board | — | —— | CN7HGB-27 |
| PC12 | Scanner (HP) | Scanner Home Position Sensor 1 | At home | Not at home | | — | —— | CN7HGB-26 |
| S5 | Size reset S | Size Reset Switch | When closed | When opened | | — | —— | CN7HGB-24 |
| PC14 | Orig. cover detecting S | Original Cover Detecting Sensor | Within 15° | 15° or more | | — | —— | CN7HGB-25 |

Printer

| Symbol | Panel Display | | Parts/Signal Name | | Operation Characteristics/Panel Display | | Input Board | IC No. | Port No. | CN/PJ No. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 0 | | | | |
| PC6 | 1st Drawer | Drawer Set | Cassette Set Sensor | | In position | Out of position | Master Board PWB-A | IC1 | PO1 | PJ13A-5B |
| PWB-H | | Double Feed | Double Feed Detecting Board | | Blocked ✱1 | Unblocked ✱1 | | IC1 | PO2 | PJ14A-8B |
| PC5 | | Paper Near Empty | Paper Near Empty Sensor | | Unblocked | Blocked | | IC1 | PO3 | PJ13A-2B |
| PC4 | | Paper Empty | Paper Empty Sensor | | Paper not present | Paper present | | IC1 | PO5 | PJ14A-13A |
| PWB-I | | Size Detect | Paper Size Detecting Board | | Analog value | | | IC1 | P103/ AN3 | PJ14A-1B to PJ14A-4B |
| S5 | 2nd Drawer | Paper Near Empty | Paper Near Empty Sensor | | Unblocked | Blocked | Cassette Main Board PWB-A | IC1 | P12 | PJ3A-11B |
| S4 | | Paper Empty | Paper Empty Sensor | | Paper not present | Paper present | | IC1 | P6 | PJ3A-5B |
| S2 | | Side Cover | Side Cover Set Sensor | | When opened | When closed | | IC1 | P9 | PJ3A-8B |
| S1 | | Drawer Detect | Cassette Set Switch | | In position: 2 displayed Out of position: 0 displayed | | | IC1 | P11 | PJ3A-12A |
| S3 | 3rd Drawer | Take-up | Take-Up Sensor | | Paper present | Paper not present | Cassette Main Board PWB-A: PF-108/ PF-110 | IC1 | P5 | PJ3A-2B |
| S5 | | Paper Near Empty | Paper Near Empty Sensor | | Unblocked | Blocked | | IC1 | P12 | PJ3A-11B |
| S4 | | Paper Empty | Paper Empty Sensor | | Paper not present | Paper present | | IC1 | P6 | PJ3A-5B |
| S2 | | Side Cover | Side Cover Set Sensor | | When opened | When closed | | IC1 | P9 | PJ3A-8B |
| S1 | | Drawer Detect | Cassette Set Switch | When PF-110 is used | In position | Out of position | | IC1 | P10 | PJ3A-9A |
| | | | | When PF-108 is used | In position: 2 displayed Out of position: 0 displayed | | | IC1 | P11 | PJ3A-12A |

✱ 1: The display of 1 or 0 is selected only while Main Motor M2 is being energized.

| Symbol | Panel Display | | Parts/Signal Name | | Operation Characteristics/Panel Display | | Input Board | IC No. | Port No. | CN/PJ No. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 0 | | | | |
| S3 | 4th Drawer | Take-up | Take-Up Sensor | | Paper present | Paper not present | Cassette Main Board PWB-A: PF-108/ PF-110 | IC1 | P5 | PJ3A-2B |
| S5 | | Paper Near Empty | Paper Near Empty Sensor | | Unblocked | Blocked | | IC1 | P12 | PJ3A-11B |
| S4 | | Paper Empty | Paper Empty Sensor | | Paper not present | Paper present | | IC1 | P6 | PJ3A-5B |
| S2 | | Side Cover | Side Cover Set Sensor | | When opened | When closed | | IC1 | P9 | PJ3A-8B |
| S1 | | Drawer Detect | Cassette Set Switch | When PF-110 is used | In position | Out of position | | IC1 | P10 | PJ3A-9A |
| | | | | When PF-108 is used | In position: 2 displayed Out of position: 0 displayed | | | IC1 | P11 | PJ3A-12A |
| S3 | 5th Drawer | Take-up | Take-Up Sensor | | Paper present | Paper not present | | IC1 | P5 | PJ3A-2B |
| S5 | | Paper Near Empty | Paper Near Empty Sensor | | Unblocked | Blocked | | IC1 | P12 | PJ3A-11B |
| S4 | | Paper Empty | Paper Empty Sensor | | Paper not present | Paper present | | IC1 | P6 | PJ3A-5B |
| S2 | | Side Cover | Side Cover Set Sensor | | When opened | When closed | | IC1 | P9 | PJ3A-8B |
| S1 | | Drawer Detect | Cassette Set Switch | When PF-110 is used | In position | Out of position | | IC1 | P10 | PJ3A-9A |
| | | | | When PF-108 is used | In position: 2 displayed Out of position: 0 displayed | | | IC1 | P11 | PJ3A-12A |
| —— | Duplex/ Bypass | Duplex Set | Duplex Unit Set signal | | In position | Out of position | Master Board PWB-A | IC1 | P91 | PJ4A-3B |
| PI1 | | Duplex Paper | Duplex Unit Transport Sensor | | Paper present | Paper not present | | IC1 | P92 | PJ4A-2B |
| S2 | | Duplex Cover | Duplex Unit Door Set Sensor | | When opened | When closed | | IC1 | P90 | PJ4A-1B |
| PC8 | | Paper Take-up | Manual Feed Paper Take-Up Sensor | | Paper present | Paper not present | | IC1 | P00 | PJ4A-7B |
| —— | | Bypass Set | Manual Bypass Tray Set signal | | In position | Out of position | | IC1 | P30 | PJ4A-9B |

| Symbol | Panel Display | | Parts/Signal Name | Operation Characteristics/Panel Display | | Input Board | IC No. | Port No. | CN/PJ No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 1 | 0 | | | | |
| LS1 | LCC | Lift Level 1 | Lift-Up Sensor 1 | At upper limit | Not at upper limit | LCC Main Board PWB-A: PF-106 | IC4 | P74/ ANI4 | CN4A-6 |
| LS2 | | Lift Level 2 | Lift-Up Sensor 2 | At upper limit | Not at upper limit | | IC4 | P73/ ANI3 | CN4A-9 |
| RSEN | | Registration | Registration Sensor | Paper present | Paper not present | | IC4 | P22/ INTP1 | CN4A-2 |
| S1 | | S1S | Paper Standby Position Sensor | Paper present ✱2 | Paper not present ✱2 | | IC4 | P23/ INTP2/ CI | CN3A-5 |
| PPS0 | | PPS0S | LCC Take-Up Sensor | Paper present | Paper not present | | IC4 | P24/ INTP3 | CN4A-11 |
| PPS1 | | PPS1S | Paper Empty Sensor 1 | Paper present | Paper not present | | IC4 | P25/ INTP4/ ASCK | CN3A-2 |
| RS1 | | Paper Near Empty 1 | Paper Near Empty Sensor 1 | Blocked | Unblocked | | IC4 | P75/ ANI5 | CN6A-1 |
| RS2 | | Paper Near Empty 2 | Paper Near Empty Sensor 2 | Blocked | Unblocked | | IC4 | P76/ ANI6 | CN5A-5 |
| PPS2 | | Paper Empty | Paper Empty Sensor 2 | Paper present | Paper not present | | IC4 | P72/ ANI2 | CN3A-8 |
| SW1 | | Paper Size | DIP switch | Letter C: 0 displayed<br>A4C: 1 displayed<br>B5C: 2 displayed | | | IC4 | P13, P14, P15 | ——— |
| TH1 | Fusing Unit | Fusing Thermistor | Fusing Roller Thermistor | Analog value | | Master Board PWB-A | IC1 | P107/ AN7 | PJ16A-5 |
| ——— | I/C | I/C Discrimination | I/C Type Detection signal | Analog value | | | IC1 | P100/ AN0 | PJ15A-3 |
| E1 | | ATDC | ATDC Sensor | Analog value | | | IC1 | P106/ AN6 | PJ15A-5 |
| TH2 | | Drum Thermistor | I/C Thermistor | Analog value | | | IC1 | P104/ AN4 | PJ13A-10A |

✱ 2: The display of 1 or 0 is selected only while LCC Transport Motor HMOT is being energized.

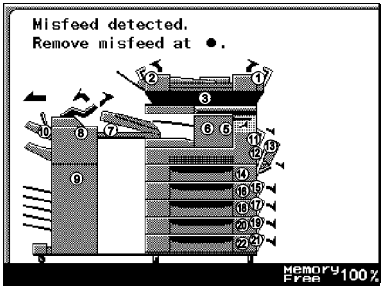
| Symbol | Panel Display | | Parts/Signal Name | Operation Characteristics/Panel Display | | Input Board | IC No. | Port No. | CN/PJ No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 1 | 0 | | | | |
| SIDE | Doors/ Toner | LCC Side Cover | Side Cover Set Sensor | When opened | When closed | LCC Main Board PWB-A | IC4 | P34/ T00 | CN3A-12 |
| FRONT | | LCC Front Cover | LCC Set Sensor | Out of position | In position | | IC4 | P35/ T01 | CN6A-4 |
| S2 | | Side Cover | Side Cover Interlock Switch | When opened | When closed | Master Board PWB-A | IC1 | P31 | PJ7A-1 |
| PC11 | | Toner Bottle Cover | Toner Bottle Cover Sensor | When opened | When closed | | IC1 | P33 | PJ11A-5B |
| S4 | | Sub Hopper | Sub Hopper Toner Empty Switch | Toner not loaded: 1 and 0 alternately displayed. Toner loaded: 0 displayed | | | IC1 | P06 | PJ11A-7B |
| PC10 | | Toner Bottle Set | Toner Bottle Home Position Sensor | At home | Not at home | | IC1 | P40 | PJ11A-2B |
| PC2 | Paper Passage | Timing Roller | Synchronizing Roller Sensor | Paper present | Paper not present | | IC1 | P41 | PJ13A-7A |
| PC3 | | Exit | Paper Exit Sensor | Paper present | Paper not present | | IC1 | P77 | PJ13A-12A |
| M3 | Drive Motor Detect | Cooling Fan | Fusing Cooling Fan Motor/LOCK | When energized: 1 and 0 alternately displayed. When deenergized: 0 displayed | | | IC1 | P04 | PJ13A-5A |
| M2 | | Main Motor | Main Motor/LOCK | When energized | When deenergized | | IC1 | P43 | PJ16A-2 |
| M1 | | I/U Motor | I/C Motor/LOCK | When energized | When deenergized | | IC1 | P42 | PJ16A-4 |
| M10 | | Polygon Motor | Polygon Motor/ LOCK | When energized | When deenergized | | IC1 | P95 | PJ8A-4 |
| M8 | | Ventilation Fan | Ozone Fan Motor | When energized: 1 and 0 alternately displayed. When deenergized: 0 displayed | | | IC1 | P51 | PJ11A-3A |

# 3 PAPER TRANSPORT FAILURE

## 3-1. Paper Misfeed

When a paper misfeed occurs, the Touch Panel shows the corresponding message, misfeed location, and paper location.

| | |
|---|---|
| ⊗ display | Misfeed location |
| ○ display | Paper location |



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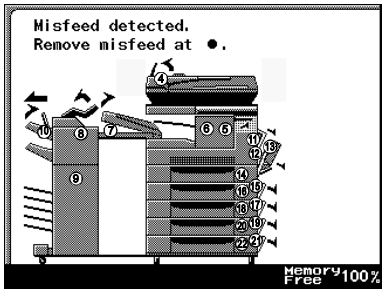

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| ⊗ or ○ Display | Misfeed/Paper Location | Ref. Page |
|---|---|---|
| 1 | AFR-14 take-up, AFR-14 single feed | See the relevant option service manual. |
| 2 | AFR-14 reverse, AFR-14 exit | |
| 3 | AFR-14 transport | |
| 4 | AF-6 take-up, AF-6 transport | |
| 5 | JS-200 transport, OT-100 transport | |
| 6 | JS-200 exit, OT-100 exit | |
| 7 | Horizontal transport | |
| 8 | Finisher transport, 1st Tray exit, Elevator Tray exit | |
| 9 | Mailbin transport | |
| 10 | Finisher Tray | |
| 11 | Separator, Fusing Unit | (3) |
| 12 | Manual Bypass take-up | (2) |
| 13 | Duplex turnover, Duplex take-up (AD-10) | (6) |
| 14 | 1st Drawer take-up | (1) |
| 15 | 2nd Drawer transport | (1) |
| 16 | 2nd Drawer take-up | (1) |
| 17 | 3rd Drawer transport (PF-108/PF-110/PF-106) | (4) or (5) |
| 18 | 3rd Drawer take-up (PF-108/PF-110/PF-106) | (4) or (5) |
| 19 | 4th Drawer transport (PF-108/PF-110/PF-106) | (4) or (5) |
| 20 | 4th Drawer take-up (PF-108/PF-110/PF-106) | (4) or (5) |
| 21 | 5th Drawer transport (PF-108/PF-110) | (4) |
| 22 | 5th Drawer take-up (PF-108/PF-110) | (4) |

✱ If a communications error occurs between UN2 and PWB-A during a copy cycle, it forces a paper misfeed condition (○ displayed on the Touch Panel). If that happens, check the circuit between UN2 and PWB-A for proper connection and, if it is intact, replace the board.

<Resetting the Display>

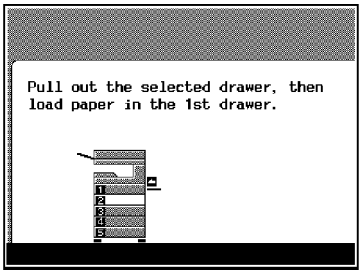
| Misfeed in the copier | Misfeed in the option |
|---|---|
| Remove all sheets of paper misfed and left inside, and then open and close the Side Cover. | Remove all sheets of paper misfed and left inside, and then raise and lower or disconnect and reconnect the option. |

✱ If the misfeed display is not reset by these procedures, check the misfeed detecting sensor at the paper location.

## 3-2. Size Error

The following warning screen appears after a misfeed display has been reset if the actual size of the paper loaded in a paper source differs from the paper size set for that particular paper source.

[1st to 5th Drawer]

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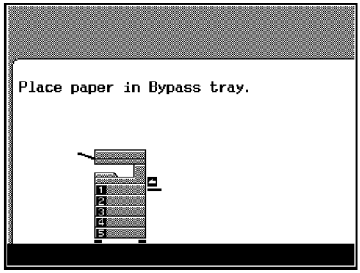
[Manual Bypass]

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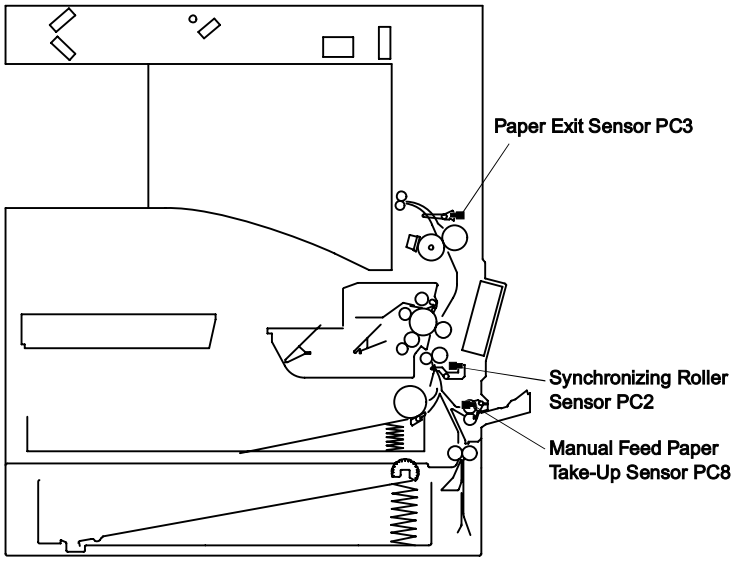
✱ 1st to 5th Drawer: A size error is indicated by a highlighted paper source in the copier overview display. (In the above example, there is a size error in the 2nd Drawer.)

<Resetting the Size Error Display>
Slide out the drawer, then slide it back in, or load paper in the Manual Bypass Tray.

<Causes of a Size Error>
- Wrong paper size settings have been made.
- The user loads paper of a size different from what is set for the paper source.
- Two or more sheets of paper are being taken up and fed in.

## 3-3. Misfeed Detection Sensor Layout



## 3-4. Types of Misfeed Detection and Detection Timings

- The following are the types of misfeed detection and detection timings for different misfeed locations.

---

*NOTE*

*For misfeed detection types and detection timings of options, see the relevant option service manual.*

---

<Copier Take-Up Misfeed>

| Type | Detection Timing | Timer Value T (sec.) |
|---|---|---|
| Paper take-up failure detection | • 1st Drawer paper take-up:<br>Synchronizing Roller Sensor PC2 is not unblocked (H) even after the lapse of T sec. after Paper Take-Up Solenoid SL1 has been energized for the second paper take-up retry sequence. | 1.28 |
| | • 2nd Drawer paper take-up:<br>PC2 is not unblocked (H) even after the lapse of T sec. after SL1 has been energized for the first paper take-up retry sequence. | 2.27 |
| | • 1st/2nd Drawer paper take-up:<br>PC2 is unblocked (H) within T sec. after SL1 has been energized. | 0.20 |

<Manual Bypass Take-Up Misfeed>

| Type | Detection Timing | Timer Value T (sec.) |
|---|---|---|
| Bypass paper take-up failure detection | PC2 is not unblocked (H) even after T sec. after Manual Feed Paper Take-Up Clutch CL3 has been energized. | 0.89 |
| | PC2 is unblocked (H) within T sec. after CL3 has been energized. | 0.20 |
| Paper left | Manual Feed Paper Take-Up Sensor PC8 is blocked (L) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed. | ——— |

<Separator Misfeed>

| Type | Detection Timing | Timer Value T (sec.) |
|---|---|---|
| Leading edge detection by Paper Exit Sensor PC3 | PC3 is not blocked (L) even after the lapse of T sec. after PC2 has been unblocked (H). | 1.92 ✱ |
| Trailing edge detection by Synchronizing Roller Sensor PC2 | PC2 is not blocked (L) even after the lapse of T sec. after it has been unblocked (H). | 4.20 ✱ |
| | PC2 is blocked (L) within T sec. after it has been unblocked (H). | 1.05 |
| Paper is stationary | During a sequence of detecting a paper size based on the period of time between when Synchronizing Clutch CL1 is energized and when PC2 is blocked (L), the paper size detected is longer than the size data sent from the controller by +260 mm or more. | ——— |
| Size error detection | The paper size detected based on the period of time between when CL1 is energized and when PC2 is blocked (L) is more than the size data sent from the controller by ±20 mm or more. | ——— |
| Paper left | PC2 is unblocked (H) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed. | ——— |

✱ Excludes the period of time during which the paper is stationary before the Synchronizing Roller.

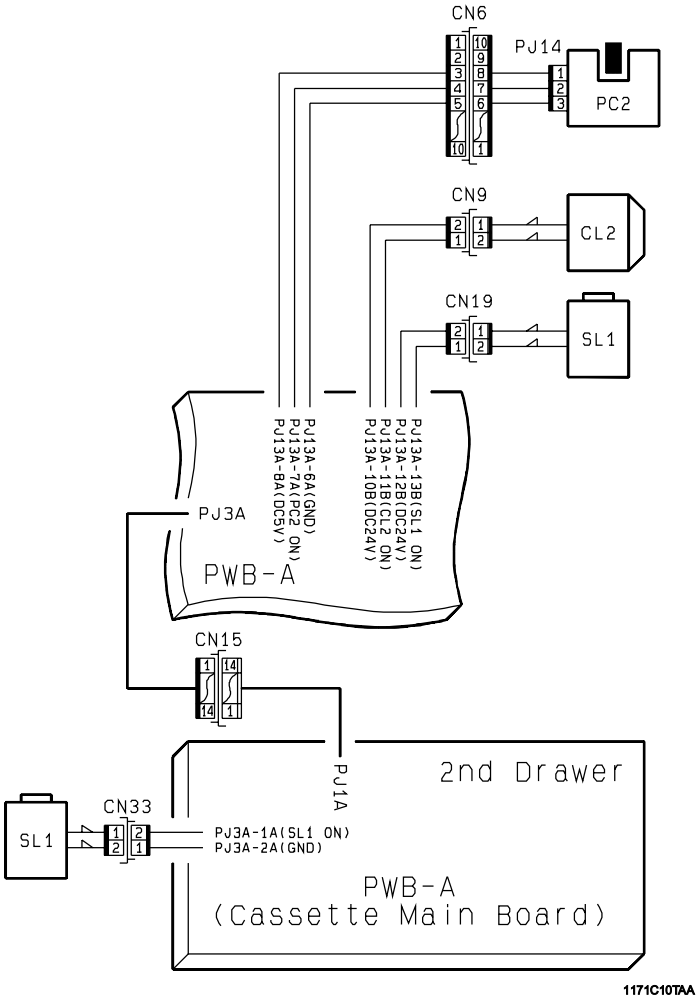
<Fusing Misfeed>

| Type | Detection Timing | Timer Value T (sec.) |
|---|---|---|
| Trailing edge detection by Paper Exit Sensor PC3 | PC3 is not unblocked (H) even after the lapse of T sec. after PC2 has been blocked (L). | 1.96 |
| Paper left | PC3 is blocked (L) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed. | ——— |

## 3-5. Misfeed Troubleshooting Procedures

### (1) Copier Take-Up Misfeed

| Relevant Electrical Parts | |
|---|---|
| Paper Take-Up Solenoid SL1 | Master Board PWB-A |
| Synchronizing Roller Sensor PC2 | Cassette Main Board PWB-A |

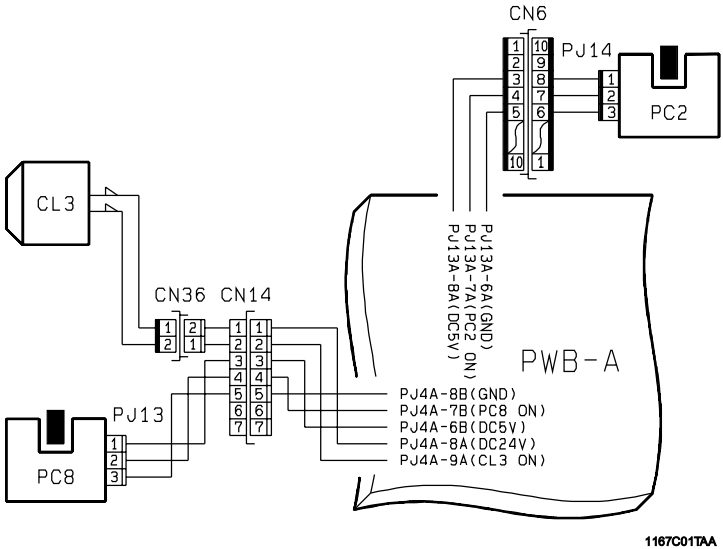


<Copier Take-Up Misfeed Troubleshooting Procedure>

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Paper is not taken up at all. | 1 | Does the paper being used meet the product specifications? | NO | Instruct the user to use the paper that meets product specifications. |
| | 2 | Is the paper curled, wavy, or damp? | YES | Change the paper. Instruct the user on the storage of paper. |
| | 3 | Are the Edge Guide and Trailing Edge Stop (of the drawer) positioned to the exact size of the paper used? | NO | Slide the guides to the exact size of the paper. |
| | 4 | Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Take-Up Roll. |
| | 5 | If the Paper Lifting Plate dirty or deformed? | YES | Clean or change the Paper Lifting Plate. |
| | 6 | Has the misfeed been detected while the Multi Purpose Cassette was being used? | YES | Check steps 7 and 8. |
| | | | NO | Check steps 9 and onward. |
| | 7 | Is the Paper Separator Pad deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Separator Pad. |
| | 8 | Check SL1 for operation. Does the voltage across CN19-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed? | YES | Check various parts for possible overload and, if they are okay, change SL1. |
| | | | NO | Change PWB-A. |
| | 9 | Is the Paper Separator Finger dirty or deformed? | YES | Clean or change the Paper Separator Finger. |
| | 10 | Check CL2 for operation. Does the voltage across CN9-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed? | NO | Change PWB-A. |
| | 11 | Check SL1 for operation. Does the voltage across PJ3A-1A on PWB-A (Cassette Main Board) and GND change from LOW to HIGH when the Start key is pressed? | YES | Check various parts for possible overload and, if they are okay, change SL1 or CL2. |
| | | | NO | Change PWB-A (Cassette Main Board) or PWB-A. |
| • Paper is at a stop before the vertical transport section.<br>• Paper is at a stop near the Synchronizing Rollers. | 1 | Is the Vertical Transport Roller deformed, worn, or dirty with paper dust? | YES | Clean or change the Vertical Transport Roller. |
| | 2 | If the Vertical Transport Guide Plate dirty or deformed? | YES | Clean or change the Vertical Transport Guide Plate. |
| | 3 | Is PC2 fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change PWB-A. |
| | | | NO | Check the PC2 actuator for operation and, if it is intact, change PC2. |

### (2) Manual Bypass Take-Up Misfeed

| Relevant Electrical Parts | |
|---|---|
| Manual Feed Paper Take-Up Clutch CL3 | Manual Feed Paper Take-Up Sensor PC8 |
| Synchronizing Roller Sensor PC2 | Master Board PWB-A |

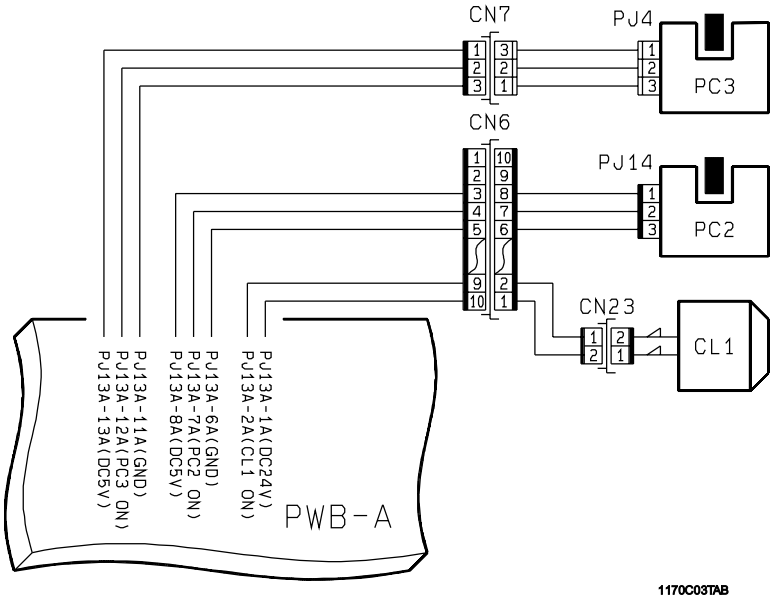


<Manual Bypass Take-Up Misfeed Troubleshooting Procedure>

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Paper is not taken up at all. | 1 | Does the paper being used meet the product specifications? | NO | Instruct the user to use the paper that meets product specifications. |
| | 2 | Is the paper curled, wavy, or damp? | YES | Change the paper. Instruct the user on the storage of paper. |
| | 3 | Is the Manual Feed Paper Take-Up Roller or Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Manual Feed Paper Take-Up Roller or Roll. |
| | 4 | Is PC8 fully operational? Check the input data using I/O Check. | NO | Check the PC8 actuator for operation and, if it is intact, change PC8. |
| | 5 | Check CL3 for operation. Does the voltage across CN14-2 and GND change from DC24V to DC0V when the misfeed condition is reset? | YES | Check various parts for possible overload and, if they are okay, change CL3. |
| | | | NO | Change PWB-A. |
| Paper is at a stop near the Synchronizing Rollers. | 1 | Is PC2 fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change PWB-A. |
| | | | NO | Check the PC2 actuator for operation and, if it is intact, change PC2. |

### (3) Separator/Fusing Misfeed

| Relevant Electrical Parts | |
|---|---|
| Paper Exit Sensor PC3 | Synchronizing Clutch CL1 |
| Synchronizing Roller Sensor PC2 | Master Board PWB-A |

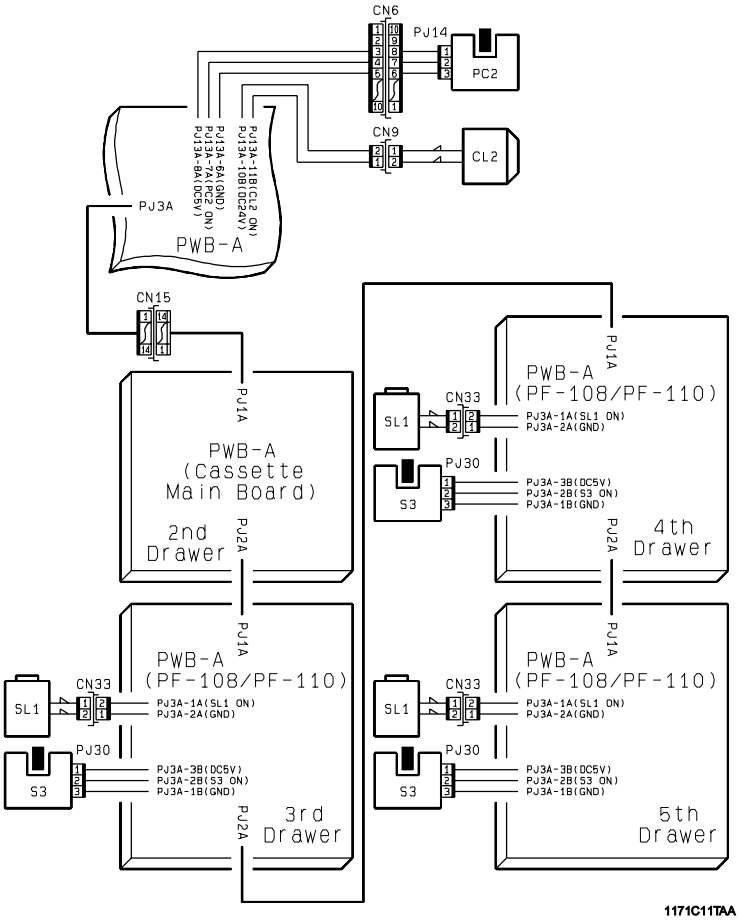


<Separator/Fusing Misfeed Troubleshooting Procedure>

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Paper is at a stop near the Synchronizing Rollers. | 1 | Are the Synchronizing Rollers deformed, worn, or dirty with paper dust? | YES | Clean or change the Synchronizing Rollers. |
| | 2 | Is a good length of loop formed before the Synchronizing Rollers? | NO | Select the following functions in this order: Tech. Rep. Mode → Tech. Rep. Choice → Printer → Loop Adjustment and make the loop adjustment. |
| | 3 | Is a size error displayed when the misfeed display is reset? | YES | Check that the size of the paper actually loaded in the current paper source matches the size set for it. |
| | 4 | Is PC2 fully operational? Check the input data using I/O Check. | NO | Check the PC2 actuator for operation and, if it is intact, change PC2. |
| | 5 | Check CL1 for operation. Does the voltage across CN6-9 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed? | YES | Check various parts for possible overload and, if they are okay, change CL1. |
| | | | NO | Change PWB-A. |
| Paper is at a stop near the PC Drum. | 1 | Is the Pre-Image Transfer Guide Plate dirty or deformed? | YES | Clean or change the guide plate. |
| | 2 | Is the Image Transfer Roller deformed, worn, or dirty with paper dust? | YES | Clean or change the Image Transfer Roller. |
| Paper is wedged at the PC Drum Paper Separator Fingers. | 1 | Are the PC Drum Paper Separator Fingers dirty or deformed? | YES | Clean or change the separator fingers. |
| | | | NO | Check the clearance between the PC Drum Paper Separator Fingers and PC Drum. |
| Paper is at a stop before the Fusing Rollers. | 1 | Is the Fusing Guide Plate dirty or deformed? | YES | Clean or change the Fusing Guide Plate. |
| Paper is at a stop at the Fusing Rollers. | 1 | Are the Fusing Rollers deformed, worn, or dirty with paper dust? | YES | Clean or change the Fusing Rollers. |
| | 2 | Are the Fusing Separator Fingers dirty or deformed? | YES | Clean, correct, or change the Fusing Separator Fingers. |
| Paper is at a stop at the exit section. | 1 | Is the Paper Exit Roller deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Exit Roller. |
| | 2 | Is PC3 fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change PWB-A. |
| | | | NO | Check the PC3 actuator for operation and, if it is intact, change PC3. |

### (4) Paper Take-Up/Transport Misfeed (PF-108/PF-110)

| Relevant Electrical Parts | |
|---|---|
| Paper Take-Up Solenoid SL1 | Master Board PWB-A |
| Take-Up Sensor S3 | Cassette Main Board PWB-A |
| Synchronizing Roller Sensor PC2 | Cassette Main Board PWB-A: PF-108/PF-110 |
| Transport Clutch CL2 | |

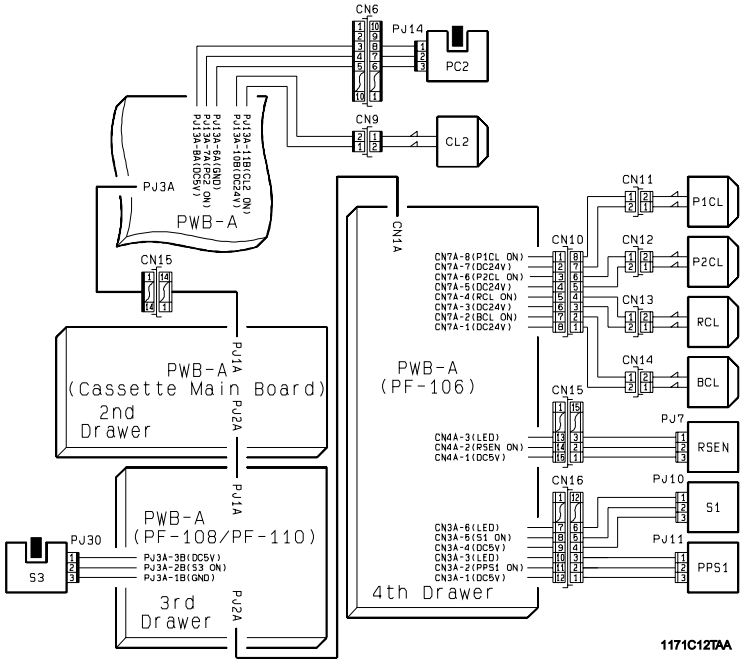


<Paper Take-Up/Transport Misfeed (PF-108/PF-110) Troubleshooting Procedure>

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Paper is not taken up at all. | 1 | Does the paper being used meet the product specifications? | NO | Instruct the user to use the paper that meets product specifications. |
| | 2 | Is the paper curled, wavy, or damp? | YES | Change the paper. Instruct the user on the storage of paper. |
| | 3 | Are the Edge Guide and Trailing Edge Stop (of the drawer) positioned to the exact size of the paper used? | NO | Slide the guides to the exact size of the paper. |
| | 4 | Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Take-Up Roll. |
| | 5 | Is the Paper Lifting Plate dirty or deformed? | YES | Clean or change the Paper Lifting Plate. |
| | 6 | Is the Paper Separator Finger dirty or deformed? | YES | Clean or change the Paper Separator Finger. |
| | 7 | Check CL2 for operation.<br>Does the voltage across CN9-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed? | NO | Change PWB-A. |
| | 8 | Check SL1 for operation.<br>Does the voltage across PJ3A-1A on PWB-A (PF-108/PF-110) and GND change from LOW to HIGH when the Start key is pressed? | YES | Check various parts for possible overload and, if they are okay, change SL1 or CL2. |
| | | | NO | Change PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |
| • Paper is at a stop at the vertical transport section.<br>• Paper is at a stop near the Synchronizing Rollers. | 1 | Is the Vertical Transport Roller deformed, worn, or dirty with paper dust? | YES | Clean or change the Vertical Transport Roller. |
| | 2 | Is the Vertical Transport Guide Plate dirty or deformed? | YES | Clean or change the Vertical Transport Guide Plate. |
| | 3 | Is a size error displayed when the misfeed display is reset? | YES | Check that the size of the paper loaded in the current drawer matches the size set for that drawer. |
| | 4 | ✻ A misfeed is detected at the transport section of the 3rd Drawer.<br>Is PC2 fully operational? Check the input data using I/O Check. | NO | Check the PC2 actuator for operation and, if it is intact, change PC2. |
| | 5 | Are all S3's fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change PWB-A. |
| | 6 | Does the voltage across PJ3A-2B on PWB-A (PF-108/PF-110) and GND change to DC0V when S3 is blocked and to DC5V when S3 is unblocked? | YES | Change PWB-A (PF-108/PF-110) or PWB-A (Cassette Main Board). |
| | | | NO | Check the S3 actuator for operation and, if it is intact, change S3. |

### (5) Paper Take-Up/Transport Misfeed (PF-106)

| Relevant Electrical Parts | |
|---|---|
| Take-Up Clutch 1 P1CL | Synchronizing Roller Sensor PC2 |
| Take-Up Clutch 2 P2CL | Transport Clutch CL2 |
| Paper Empty Sensor 1 PPS1 | Take-Up Sensor S3 |
| Paper Standby Position Sensor S1 | LCC Main Board PWB-A: PF-106 |
| Separator Clutch BCL | Cassette Main Board PWB-A: PF-108/PF-110 |
| Registration Clutch RCL | Cassette Main Board PWB-A |
| Registration Sensor RSEN | Master Board PWB-A |




<Paper Take-Up/Transport Misfeed (PF-106) Troubleshooting Procedure>

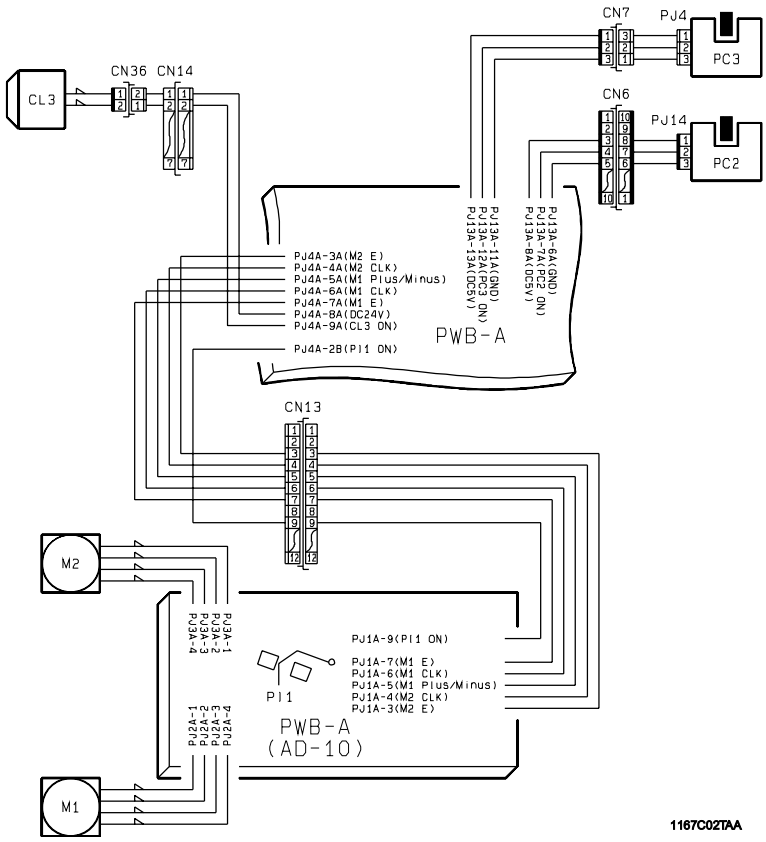
| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| • Paper is not taken up at all.<br>• Paper is at a stop before the Paper Feed/ Separator Rolls. | 1 | Does the paper being used meet the product specifications? | NO | Instruct the user to use the paper that meets product specifications. |
| | 2 | Is the paper curled, wavy, or damp? | YES | Change the paper. Instruct the user on the storage of paper. |
| | 3 | Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Take-Up Roll. |

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| • Paper is not taken up at all.<br>• Paper is at a stop before the Paper Feed/ Separator Rolls. | 4 | Is PPS1 fully operational? Check the input data using I/O Check. | YES | Perform steps 6 and onward. |
| | 5 | Does the voltage across CN3A-2 on PWB-A (PF-106) and GND change from LOW to HIGH when PPS1 is blocked? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order. |
| | | | NO | Change PPS1. |
| | 6 | Is paper fed up to S1 when paper is loaded in Lift 2 only and the drawer is slid into the copier? | YES | Perform steps 8 and onward. |
| | 7 | Check P2CL for operation. Does the voltage across CN7A-6 on PWB-A (PF-106) and GND change from DC24V to DC0V when step 6 is performed again? | YES | Check various parts for possible overload and, if they are okay, change P2CL. |
| | | | NO | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |
| | 8 | Check P1CL for operation. Does the voltage across CN7A-8 on PWB-A (PF-106) and GND change from DC24V to DC0V when step 6 is performed again? | NO | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |
| | 9 | Is S1 fully operational? Check the input data using I/O Check. Does the "S1S" input signal change from 0 to 1 when the drawer loaded with paper is slid into the copier? | YES | Perform steps 11 and onward. |
| | 10 | Does the voltage across CN3A-5 on PWB-A (PF-106) and GND change from LOW to HIGH when step 9 is performed again? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order. |
| | | | NO | Change S1. |
| | 11 | Is the Paper Feed Roll or Separator Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Feed Roll or Separator Roll. |
| | 12 | Check BCL for operation. Does the voltage across CN7A-2 on PWB-A (PF-106) and GND change from DC24V to DC0V when the Start key is pressed? | YES | Check various parts for possible overload and, if they are okay, change P1CL or BCL. |
| | | | NO | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| • Paper is at a stop at the vertical transport section.<br>• Paper is at a stop near the Synchronizing Rollers. | 1 | Is the Vertical Transport Roller or Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Vertical Transport Roller or Roll. |
| | 2 | Is RSEN fully operational? Check the input data using I/O Check. | YES | Check step 4 and onward. |
| | 3 | Does the voltage across CN4A-2 on PWB-A (PF-106) and GND change from LOW to HIGH when RSEN is blocked? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order. |
| | | | NO | Change RSEN. |
| | 4 | Check RCL for operation. Does the voltage across CN7A-4 on PWB-A (PF-106) and GND change from DC24V to DC0V when the Start key is pressed? | NO | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |
| | 5 | Check CL2 for operation. Does the voltage across CN9-1 on PWB-A and GND change from DC24V to DC0V when the Start key is pressed? | NO | Change PWB-A. |
| | 6 | ✱ If the 3rd Drawer is PF-106<br>Is PC2 fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change RCL, CL2, or PWB-A, in that order. |
| | | | NO | Check the PC2 actuator for operation and, if it is intact, change PC2. |
| | 7 | ✱ If the 4th Drawer is PF-106<br>Is S3 fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change RCL, CL2, or PWB-A, in that order. |
| | 8 | Does the voltage across PJ3A-2B on PWB-A (PF-108/PF-110) and GND change to DC0V when S3 is blocked and to DC5V when S3 is unblocked? | YES | Change PWB-A (PF-108/PF-110) or PWB-A (Cassette Main Board). |
| | | | NO | Check the S3 actuator for operation and, if it is intact, change S3. |

### (6) Duplex Turnover/Take-Up Misfeed (AD-10)

| Relevant Electrical Parts | |
|---|---|
| Paper Exit Sensor PC3 | Duplex Unit Transport Motor M2 |
| Duplex Unit Transport Sensor PI1 | Manual Feed Paper Take-Up Clutch CL3 |
| Synchronizing Roller Sensor PC2 | Master Board PWB-A |
| Switchback Motor M1 | Duplex Main Board PWB-A: AD-10 |



<Duplex Turnover/Take-Up Misfeed (AD-10) Troubleshooting Procedure>

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Paper is at a stop near the exit section. | 1 | Is the Paper Exit Roller deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Exit Roller. |
| | 2 | Is PC3 fully operational? Check the input data using I/O Check. | NO | Check the PC3 actuator for operation and, if it is intact, change PC3. |
| | 3 | Check M1 for operation. Does the voltage across PJ1A-7 on PWB-A (AD-10) and GND change from DC5V to DC0V during a 2-sided copy cycle? | YES | Check gears for proper engagement. |
| | | | NO | Change PWB-A. |
| | 4 | Does the voltage across PJ1A-5 on PWB-A (AD-10) and GND change from DC5V to DC0V during a 2-sided copy cycle? | YES | Check various parts for possible overload and, if they are okay, change M1 or PWB-A (AD-10). |
| | | | NO | Change PWB-A. |
| Paper is at a stop inside the Duplex Unit. | 1 | Is the Duplex Unit Transport Roller or Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Duplex Unit Transport Roller or Roll. |
| | 2 | Is a torn piece of paper present on the paper path surface? | YES | Remove the torn piece of paper. |
| | 3 | Is the Manual Feed Take-Up Roller or Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Manual Feed Take-Up Roller or Roll. |
| | 4 | Check M2 for operation. Does the voltage across PJ1A-3 on PWB-A (AD-10) and GND change from DC5V to DC0V during a 2-sided copy cycle? | YES | Check gears for proper engagement. |
| | | | NO | Change PWB-A. |
| | 5 | Is PI1 fully operational? Check the input data using I/O Check. | NO | Check the PI1 actuator for operation and, if it is intact, change PWB-A (AD-10). |
| | 6 | Check CL3 for operation. Does the voltage across CN14-2 and GND change from DC24V to DC0V when paper is taken up from the Duplex Unit? | YES | Check various parts for possible overload and, if they are okay, change CL3 or M2. |
| | | | NO | Change PWB-A. |
| Paper is at a stop near the Synchronizing Rollers. | 1 | Is PC2 fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change PWB-A. |
| | | | NO | Check the PC2 actuator for operation and, if it is intact, change PC2. |

# 4 MALFUNCTION

The copier CPU has a function that self-diagnoses the copier conditions. On detection of a malfunction, the corresponding code representing a particular malfunction name, location, and details as listed below is displayed on the Touch Panel together with a Tech. Rep. call message.

- Perform the following steps to reset the malfunction.

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**Malfunction Resetting Procedure**

- Turn OFF, then ON the Power Switch or open and close the Side Cover for all malfunctions except fusing-related ones (C05**).
- Use "Trouble Reset" of the "Initial" screen to reset all malfunctions including fusing-related ones (C05**).

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## 4-1. Detection Timing by Malfunction Code

| Code | Description | Detection Timing |
|---|---|---|
| C0000 | Main Motor M2 malfunction | The Lock signal remains HIGH for a continuous 1-sec. period or more while M2 remains energized. |
| C0010 | I/C Motor M1 malfunction | The Lock signal remains HIGH for a continuous 1-sec. period or more while M1 remains energized. |
| C0045 | Fusing Cooling Fan Motor M3 malfunction | The Lock signal remains HIGH or LOW for a continuous 1-sec. period or more while M3 remains energized. |
| C004C | Ozone Fan Motor M8 malfunction | The Lock signal remains HIGH or LOW for a continuous 1-sec. period or more while M8 remains energized. |
| C004E | Power Unit Cooling Fan Motor M4 | The Lock signal (analog input voltage) remains 0.4V or less for a continuous 0.5-sec. period or more while M4 remains energized. |
| C0070 | Main Hopper Toner Replenishing Motor M6 malfunction | • Toner Bottle Home Position Sensor PC10 remains blocked (L) for a continuous 2-sec. period or more while M6 remains energized.<br>• PC10 remains unblocked (H) for a continuous 6-sec. period or more while M6 remains energized. |
| C0050 | Warming-up failure | The temperature of the Fusing Rollers do not reach the required level even after the lapse of a given period of time during a warming-up cycle.<br>• From room temperature to 100°C: Within 65 sec.<br>• From 100°C to 140°C: Within 25 sec.<br>• From 140°C to 170°C: Within 20 sec.<br>• From 170°C to the completion of warming-up: Within 22 sec. |
| C0510 | Abnormally low fusing temperature | • The fusing temperature remains 130°C or less for a continuous 0.1-sec. period or more during the standby state or printing.<br>• The fusing temperature remains 80°C or less for a continuous 2-min. period or more during the low-temperature standby state. |
| C0520 | Abnormally high fusing temperature | The fusing temperature remains 230°C or more for a continuous 0.1-sec. period or more. |

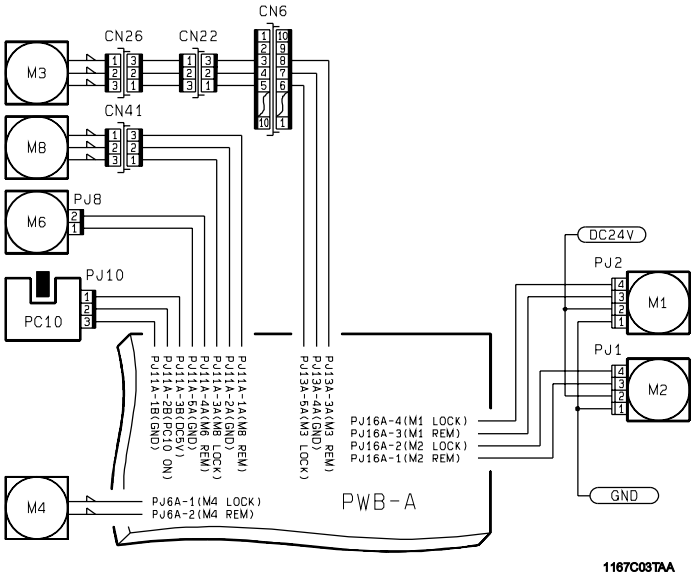
| Code | Description | Detection Timing |
|---|---|---|
| C0650 | Faulty Scanner Home Position Sensor 1 PC12 | <The Power Switch is turned ON, Original Cover lowered, or Start key pressed when the Scanner is at its home position><br>• PC12 is not unblocked (H) even when the Scanner moves 10 mm to the left.<br>• PC12 is not blocked (L) even when the Scanner moves 4 mm to the right after PC12 has been unblocked (H).<br><The Power Switch is turned ON, Original Cover lowered, or Start key pressed when the Scanner is at any position other than home><br>• PC12 is not blocked (L) even when the Scanner moves 469.5 mm to the right. |
| C0651 | Faulty Scanner Home Position Sensor 2 PC13 | When the Start key is pressed with a document loaded in the Document Feed Tray of AF-7, PC13 is not blocked (L) even when the Scanner moves 463 mm to the left after PC12 has been unblocked (H). |
| C0990 | LCC Lift-Up Motor EMOT malfunction (PF-106) | ✱ See option service manual. |
| C0991 | Lift 1 ascent motion failure (PF-106) | |
| C0995 | LCC Transport Motor HMOT malfunction (PF-106) | |
| C0999 | Lift 2 ascent motion failure (PF-106) | |
| C099D | Communications error (PF-106) | |
| C0B00 | Transport Motor M1 drive malfunction (FN-100/FN-500) | |
| C0B0F | Paper Entrance Switching Motor M1 drive malfunction (FN-100/FN-500) | |
| C0B30 | CD Aligning Motor M4 drive malfunction (FN-100/FN-500) | |
| C0B38 | Shift Motor M5 drive malfunction (FN-100/FN-500) | |
| C0B4D | Paper Holding Tray Motor M10 drive malfunction (FN-100/FN-500) | |
| C0B4E | Finisher Tray Motor M8 drive malfunction (FN-100/FN-500) | |
| C0B50 | Stapling Motor drive malfunction (FN-100/FN-500) | |
| C0BA0 | Elevator Motor M9 drive malfunction (FN-100/FN-500) | |
| C0F32 | Faulty ATDC Sensor E1 | The value of data read by E1 is faulty. [E1 reading is 7% or less (3.92V or more) or 19% or more (1.41V or less).] |

| Code | Description | Detection Timing |
|---|---|---|
| C0F33 | ATDC adjustment failure | • In an F8 (ATDC control voltage automatic adjustment) operation, the adjustment of ATDC control voltage is not completed within 1 min. after E1 sampling.<br>• In an F8 operation, the control voltage falls outside the range of 5.39V to 8.15V. |
| C1038 | Engine connection error | • The system fails in checking initial engine connection when Power Switch S1 is turned ON.<br>• The system succeeded in checking initial connection when S1 was turned ON; then it fails in rechecking initial connection through the execution of a software reset when a communications error occurs during operation. |
| C1300 | Polygon Motor M10 malfunction | <Resolution selection failure detection><br>• The Lock signal is not detected for a given period of time after the resolution has been selected. (The Lock signal is not, however, detected for 1 sec. after the start.)<br><Faulty Lock signal detection><br>• No Lock signals are detected for the 1-sec. period which starts 1 sec. after the first Lock.<br>* First Lock: The first Lock signal following 1 sec. after the selection of start or half speed.<br><Out-of-timing Lock detection><br>• The Lock signal is not detected for a continuous 0.5-sec. period while M10 is in the stabilized turning state (after a Lock has been detected).<br><Abnormal Lock detection><br>• The Lock signal remains ON for a continuous 5-sec. period while M10 remains deenergized. |
| C133A | Communications error (G/A) | ——— |
| C133B | Communications error (option I/F) | ——— |
| C13C0 | I/C initialization failure | After failing to blow the imaging cartridge fuse 2 consecutive times, 3.6V or more is detected and the I/C is determined to be new. |
| C13D0 | Faulty EEPROM | No initial data is written in EEPROM. |
| C13F0 | HSYNC detection failure | • The SOS rising edge is not detected even after the lapse of 0.2 sec. after Polygon Motor M10 has started and laser output started.<br>• No SOS rising edges are detected while VIA remains ON. |

## 4-2. Troubleshooting Procedures by Malfunction Code

**(1) C0000: M2 Malfunction**
**C0010: M1 Malfunction**
**C0045: M3 Malfunction**
**C004C: M8 Malfunction**
**C004E: M4 Malfunction**
**C0070: M6 Malfunction**

| Relevant Electrical Parts | |
|---|---|
| I/C Motor M1 | Main Hopper Toner Replenishing Motor M6 |
| Main Motor M2 | Ozone Fan Motor M8 |
| Fusing Cooling Fan Motor M3 | Toner Bottle Home Position Sensor PC10 |
| Power Unit Cooling Fan Motor M4 | Master Board PWB-A |



C0000

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does M2 turn after the malfunction has been reset? | NO | Check various parts for possible overload. |
| 2 | Check M2 for operation.<br>Does the voltage across PJ1-3 of M2 and GND change from DC5V to DC0V after the malfunction has been reset? | NO | Change PWB-A. |
| 3 | Does the voltage across PJ1-4 of M2 and GND change from DC5V to DC0V after the malfunction has been reset? | YES | Change PWB-A. |
| | | NO | Change M2. |

C0010

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does M1 turn after the malfunction has been reset? | NO | Check various parts for possible overload. |
| 2 | Check M1 for operation.<br>Does the voltage across PJ2-3 of M1 and GND change from DC5V to DC0V after the malfunction has been reset? | NO | Change PWB-A. |
| 3 | Does the voltage across PJ2-4 of M1 and GND change from DC5V to DC0V after the malfunction has been reset? | YES | Change PWB-A. |
| | | NO | Change M14. |

C0045

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does M3 turn after the malfunction has been reset? | NO | Check the connector and harness between M3 and PWB-A. |
| 2 | Check M3 for operation.<br>Does the voltage across CN6-8 on the PWB-A side and GND change from DC0V to DC24V after the malfunction has been reset? | NO | Change PWB-A. |
| 3 | Does the “C0045” display persist even after M3 has been replaced with a new one? | YES | Change PWB-A. |

C004C

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does M8 turn after the malfunction has been reset? | NO | Check various parts for possible overload. |
| 2 | Check M8 for operation.<br>Does the voltage across CN41-3 on the PWB-A side and GND change from DC0V to DC24V after the malfunction has been reset? | NO | Change PWB-A. |
| 3 | Does the "C004C" display persist even after M8 has been replaced with a new one? | YES | Change PWB-A. |

C004E

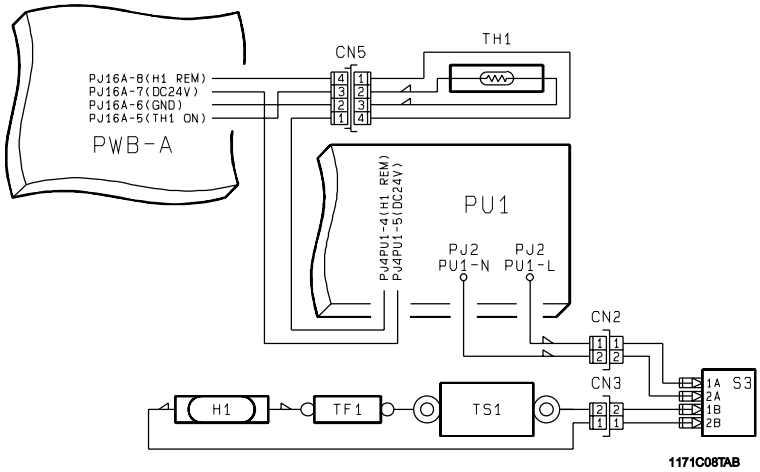
| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does M4 turn after the malfunction has been reset? | YES | Change PWB-A. |
| 2 | Does the "C004E" display persist even after M4 has been replaced with a new one? | YES | Change PWB-A. |

C0070

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | After the malfunction has been reset, remove the Rear Lower Cover and block Toner Bottle Cover Sensor PC11. Then, unlocking the Toner Bottle Lock Lever, turn the Toner Bottle a half turn by hand. Does the Toner Bottle turn when PC11 is unblocked (H) with the Toner Bottle Lock Lever kept unlocked? | YES | Perform step 3. |
| | | NO | Check various parts for possible overload. |
| 2 | Does the voltage across PJ8-2 of M6 and GND change from DC0V to DC24V when step 1 is performed again? | YES | Change M6. |
| | | NO | Change PWB-A. |
| 3 | Is PC10 fully operational?<br>Check the input data using I/O Check. Does the input signal value for "Toner Bottle Set" change between "0" and "1" when the Toner Bottle is turned by hand? | YES | Change PWB-A. |
| | | NO | Change PC10. |

**(2) C0500: Warming-up Failure**
**C0510: Abnormally Low Fusing Temperature**
**C0520: Abnormally High Fusing Temperature**

| Relevant Electrical Parts | |
|---|---|
| Fusing Roller Heater Lamp H1 | Fusing Roller Heater Lamp Fuse TF1 |
| Fusing Roller Thermistor TH1 | Side Cover Interlock Switch 2 S3 |
| Fusing Roller Thermostat TS1 | Power Supply Unit 1 PU1 |
| | Master Board PWB-A |



C0500, C0510

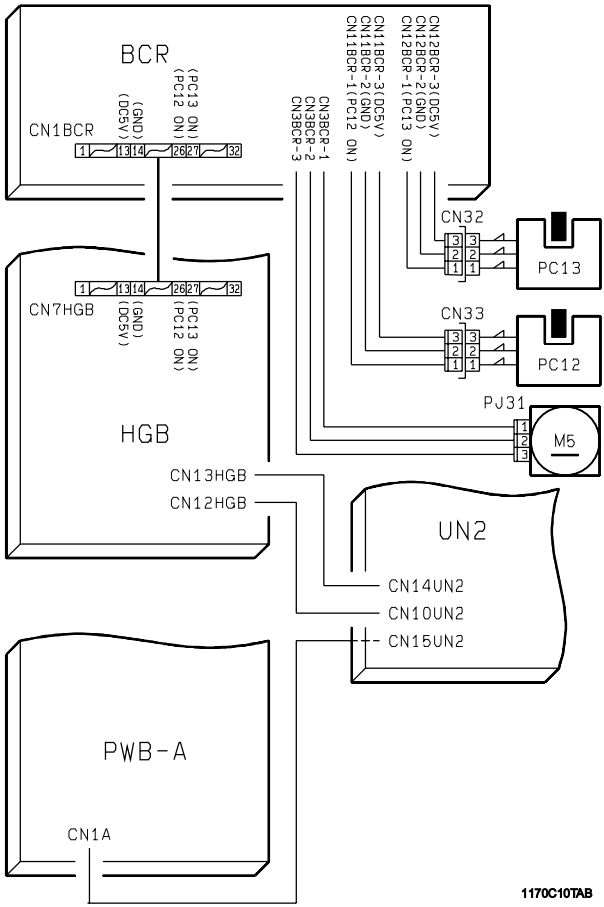
| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does H1 turn ON after the malfunction is reset? | YES | Check TH1 for contamination or installation. |
| 2 | Is there continuity across CN3-1 and 2 on the Fusing Unit end with CN3 (2P) disconnected? | NO | Check H1, TS1, and TF1 for continuity. |
| 3 | Is there continuity across 1A and 1B, and across 2A and 2B, of S3 when S3 is turned ON? | NO | Change S3. |
| 4 | Is the resistance of TH1 (across CN5-2 and 3 on the Fusing Unit end) infinity? | YES | Change TH1. |
| 5 | Is Fuse F2 on PU1 conducting? | YES | Change PU1 or PWB-A. |
| | | NO | Change the fuse. |

C0520

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Is TH1 installed properly? | NO | Install TH1 correctly. |
| 2 | Is TH1 dirty? | YES | Clean or change TH1. |
| 3 | Is the circuit across CN5-2 and 3 on the Fusing Unit end closed when CN5 (4P) is disconnected? | YES | Change TH1. |
| | | NO | Change PWB-A or PU1. |

**(3) C0650: Faulty PC12**
**C0651: Faulty PC13**

| Relevant Electrical Parts | |
|---|---|
| Scanner Home Position Sensor 1 PC12 | BCR Board BCR |
| Scanner Home Position Sensor 2 PC13 | HGB Board HGB |
| Scanner Motor M5 | MFB Board UN2 |
| Master Board PWB-A | |

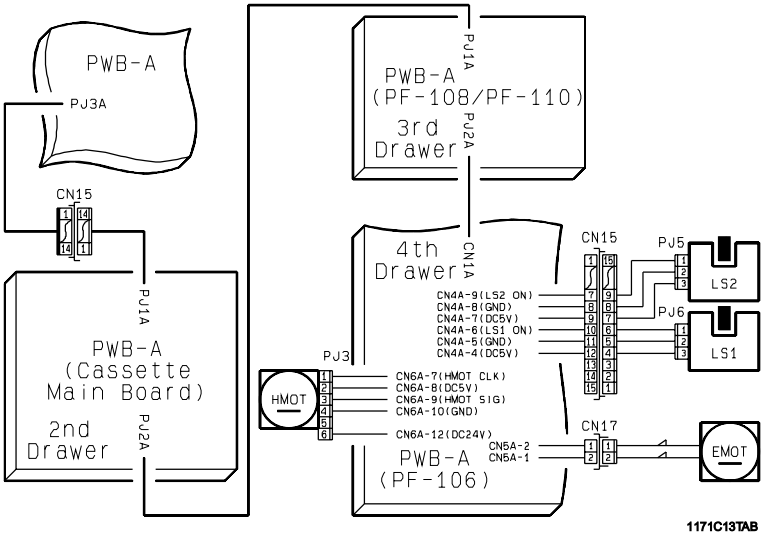


C0650, C0651

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Is M5 energized?<br>Select the following functions in this order: Tech. Rep. Mode → Movement Check → Scanner. Then, enter an appropriate value in "Absolute Position" or "Relative Position" and energize M5. | NO | Check various parts for possible overload and, if they are okay, change M5, BCR, HGB, UN2, or PWB-A, in that order. |
| 2 | Is "C0650" being displayed? | YES | Perform steps 3 and 4. |
| | | NO | Perform steps 5 and 6. |
| 3 | Does the voltage across CN11BCR-1 on BCR and GND change from DC0V to DC5V when step 1 is performed a second time and PC12 is unblocked? | NO | Change PC12. |
| 4 | Does the voltage across CN1BCR-26 on BCR and GND change from DC0V to DC5V when step 3 is performed a second time? | YES | Change HGB, UN2, or PWB-A, in that order. |
| | | NO | Change BCR. |
| 5 | Does the voltage across CN12BCR-1 on BCR and GND change from DC5V to DC0V when step 1 is performed a third time and PC13 is unblocked? | NO | Change PC13. |
| 6 | Does the voltage across CN1BCR-27 on BCR and GND change from DC0V to DC5V when step 5 is performed a second time? | YES | Change HGB, UN2, or PWB-A, in that order. |
| | | NO | Change BCR. |

**(4) C0990: EMOT Malfunction**
**C0991: Lift 1 Ascent Motion Failure**
**C0995: HMOT Malfunction**
**C0999: Lift 2 Ascent Motion Failure**
**C099D: Communications Error**

| Relevant Electrical Parts | |
|---|---|
| LCC Lift-Up Motor EMOT | LCC Main Board PWB-A: PF-106 |
| Lift-Up Sensor 1 LS1 | Cassette Main Board PWB-A: PF-108/PF-110 |
| Lift-Up Sensor 2 LS2 | Cassette Main Board PWB-A |
| LCC Transport Motor HMOT | Master Board PWB-A |



C0990

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does “C0990” reappear even after EMOT has been replaced with a new one? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |

C0991

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Is LS1 fully operational? Check the input data using I/O Check. | YES | Perform step 3 and onward. |
| 2 | Does the voltage across CN4A-6 on PWB-A (PF-106) and GND change to DC5V when LS1 is blocked and to DC0V when LS1 is unblocked? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order. |
| | | NO | Change LS1. |
| 3 | Does EMOT turn when a drawer loaded with paper is slid into the copier? | YES | Check gears and couplings for proper engagement and, if they are okay, change PWB-A. |
| 4 | Does the voltage across CN5A-1 on PWB-A (PF-106) and GND change from DC0V to DC24V when step 3 is performed again? | YES | Check various parts for possible overload and, if they are okay, change EMOT. |
| | | NO | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |

C0995

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does “C0995” reappear even after HMOT has been replaced with a new one? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |

C0999

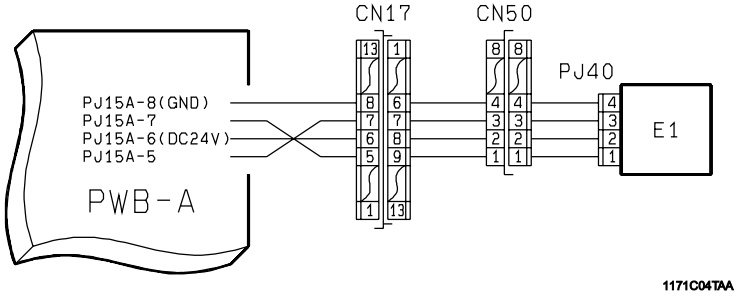
| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Is LS2 fully operational? Check the input data using I/O Check. | YES | Perform step 3 and onward. |
| 2 | Does the voltage across CN4A-9 on PWB-A (PF-106) and GND change to DC5V when LS2 is blocked and to DC0V when LS2 is unblocked? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order. |
| | | NO | Change LS2. |
| 3 | Does EMOT turn when a drawer loaded with paper is slid into the copier? | YES | Check gears and couplings for proper engagement and, if they are okay, change PWB-A. |
| 4 | Does the voltage across CN5A-1 on PWB-A (PF-106) and GND change from DC0V to DC24V when step 3 is performed again? | YES | Check various parts for possible overload and, if they are okay, change EMOT. |
| | | NO | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |

C099D

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does "C099D" reappear even after PWB-A (PF-106) has been replaced with a new one? | YES | Change PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |

**(5) C0F32: Faulty E1**
**C0F33: ATDC Adjustment Failure**

| Relevant Electrical Parts | |
|---|---|
| ATDC Sensor E1 | Master Board PWB-A |




C0F32, C0F33

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Are PJ40, CN50, CN17, and PWB-A PJ15A connected properly? | NO | Connect them properly. |
| 2 | Is the CN50 connection dirty? | YES | Clean. |
| 3 | Is "C0F32" or "C0F33" displayed even when an I/C with the same T/C as that of a new one has been installed? | NO | Change the I/C with a new one. |
| 4 | Is "C0F32" or "C0F33" displayed even when an I/C with the same T/C as that of a new one has been installed and an F8 operation run? (Be sure to record the ATDC control voltage setting value if an F8 operation is to be run.) | YES | Change PWB-A, install the old I/C, and return the ATDC control voltage setting to the value recorded. If "C0F32" or "C0F33" redisplayed, change the I/C with a new one. |
| | | NO | Change the I/C with a new one. |

### (6) C10** to C13**

- These malfunctions are concerned with faulty symptoms as they relate to software, hardware, and communications. For remedial actions, change the board, check for cable connections, and turn the Power Switch OFF and ON.

| Code | Action |
|---|---|
| C1038 | 1. Check the connection between PWB-A and UN2, reset the malfunction, and turn OFF and ON the Power Switch.<br>2. If the same malfunction persists, change PWB-A or UN2. |
| C1300 | 1. Reset the malfunction and turn OFF and ON the Power Switch.<br>2. If the same malfunction persists, check the harnesses and PJs between PH Unit and PWB-A and, if they are intact, change PH Unit or PWB-A, in that order. |
| C133A | 1. Reset the malfunction and turn OFF and ON the Power Switch.<br>2. If the same malfunction persists, check the connection between the copier PWB-A and A to E below:<br>A. 2nd Drawer paper source unit<br>B. 3rd Drawer paper source unit (PF-108/PF-110/PF-106)<br>C. 4th Drawer paper source unit (PF-108/PF-110/PF-106)<br>D. 5th Drawer paper source unit (PF-108/PF-110)<br>E. Job Tray (JS-200) or shift Tray (OT-100)<br>3. If the connection is made properly, unplug the connector between the copier and A to E and turn OFF and ON the Power Switch.<br>→If the malfunction code display persists, change the copier PWB-A.<br>→If the malfunction is no longer detected, connect the connectors sequentially and turn OFF and ON the Power Switch. When "C133A" is detected, check the connector of the corresponding paper source unit and, if it is intact, change the PWB-A of the unit. |
| C133B | 1. Reset the malfunction and turn OFF and ON the Power Switch.<br>2. If the same malfunction persists, check the connection between the copier PWB-A and Finisher PWB-A.<br>3. If the connection is made properly, unplug the connector between the copier and Finisher and turn OFF and ON the Power Switch.<br>→If the malfunction code display persists, change the copier PWB-A.<br>→If the malfunction is no longer detected, check the connector and, if it is intact, change the Finisher PWB-A. |
| C13C0 | 1. Reset the malfunction, turn OFF and ON the Power Switch, and reinstall the I/C.<br>2. If the malfunction is detected again, check the terminal block for the I/C fuse and HV1 and, if it is intact, change HV1 or PWB-A. |
| C13D0 | 1. Reset the malfunction, turn OFF and ON the Power Switch, and unplug the power cord and plug it back in.<br>2. If the malfunction is detected again, check the connection between IC3 on PWB-A and the EEPROM and, if it is good, change PWB-A.<br>3. If the malfunction is still detected, change the EEPROM.<br>* For the precautions to be observed when replacing the EEPROM, see DIS/REASSEMBLY, ADJUSTMENT. |
| C13F0 | 1. Reset the malfunction and turn OFF and ON the Power Switch.<br>2. If the same malfunction persists, check the harnesses and PJs between PH Unit and PWB-A and, if they are intact, change PH Unit or PWB-A, in that order. |

### (7) The Copier Does not Turn ON.

| Relevant Electrical Parts | |
|---|---|
| Power Switch S1<br>Side Cover Interlock Switch 1 S2<br>Power Supply Unit 1 PU1<br>Power Supply Unit 2 PU2 | Master Board PWB-A<br>Control Panel UN1<br>MFB Board UN2 |

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Power does not turn ON. | 1 | Is there an AC power supply voltage across PJ1PU1-1 and 3 on PU1 when S1 is turned ON? | NO | Check S1, PU1 fuse, and power supply voltage. |
| | 2 | Is the voltage across PJ5PU1-10 and GND DC5V when S1 is turned ON? | YES | Check the fuse on PWB-A. |
| | | | NO | Change PU1. |
| | 3 | Is the voltage across PJ5PU1-4 and GND DC24V when S1 is turned ON? | NO | Change PU1. |
| | 4 | Is the voltage across PJ5PU1-3 and GND DC24V when S1 is turned ON? | NO | Change PU1. |
| | 5 | Does the voltage across the S2 connector (yellow) and GND change from DC0V to DC24V when S2 is turned ON? | NO | Check S2. |
| | 6 | Is the voltage across PJ7PU1-9 on PU1 and GND DC3.3V? | NO | Change PU1. |
| | 7 | Is the voltage across CN1PU2-1 on PU2 and GND DC24V? | NO | Change PU1. |
| | 8 | Is the voltage across CN28UN2-8 on UN2 and GND DC-12V? | NO | Change PU2. |
| | 9 | Is the voltage across CN28UN2-7 on UN2 and GND DC12V? | YES | Change PWB-A. |
| | | | NO | Change PU2. |
| The control panel indicates nothing. | 1 | Is DC24V being output from UN2 to UN1?<br>Disconnect CN1UN1 of UN1 and check to see if the voltage across CN1UN1-1 on the harness side and GND is DC24V. | NO | Change UN2. |
| | 2 | Is DC5V being output from UN2 to UN1?<br>Disconnect CN1UN1 of UN1 and check to see if the voltage across CN1UN1-28 on the harness side and GND, and across CN1UN1-29 and GND, is DC5V. | YES | Change UN1. |
| | | | NO | Change UN2. |

# 5 IMAGE FAILURE

## 5-1. Image Failure Troubleshooting

Image failures have many possible causes. For troubleshooting, it is necessary to determine whether a failure is attributable to:
1. A basic cause or any other cause
2. The input system (IR) or output system (engine).

In this chapter, troubleshooting is divided into "initial checks" and "troubleshooting procedures classified by image failures." If an image failure has occurred, first make the initial checks, then proceed to the corresponding image failure troubleshooting procedure.

## 5-2. Initial Checks

1. Place of installation
- Is the source voltage normal? Does the voltage vary greatly?
- Is the copier installed in a hot, humid place where temperature varies sharply?
- Is the copier installed in a dusty place?
- Is the copier subjected to direct sunlight?
- Is the copier level?

2. Copy paper
- Is the recommended paper used?
- Is the paper damp?
- Does the paper size set in the paper source match the size of the paper loaded in it?

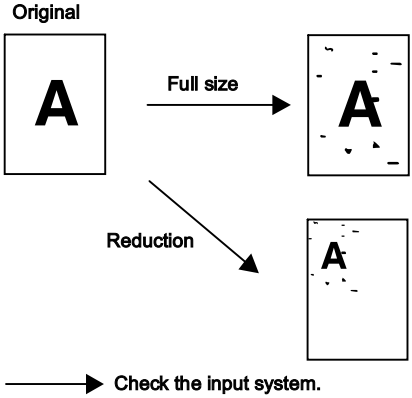
3. Original
- Is the original written in light pencil?
  → Use the test chart to check the image.
- Is the original transparent, or are transparencies being used?
  → Place a blank sheet of paper over the original and make a copy.
- Is the Original Glass dirty or scratched?
  → Clean a dirty glass, or replace a scratched one.

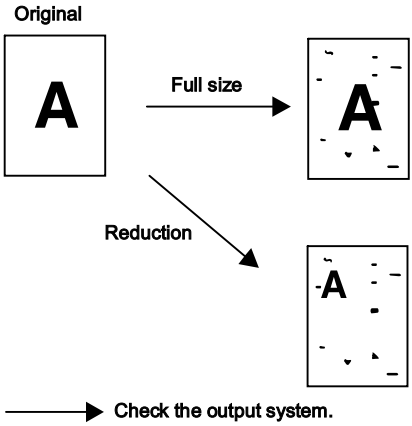
4. Adjust data and Level History data
- Do the values set for "Adjust" and "Level History" fall within the specified range?

5. PM parts (supplies)
- Have the PM parts (supplies), such as the PC Drum, Cleaning Blade, and other parts that affect image quality, reached the end of their cleaning or replacement cycle?
- Are two or more imaging cartridges being used alternately?

6. Adjustment items (registration, focus, etc.)
- Among the adjustment items given in DIS/REASSEMBLY, ADJUSTMENT, is there any adjustment that may remedy the image failure?

7. Input system (IR) or output system (engine)?
- Run "F12" which can be selected as follows: Tech. Rep. Mode → Function.
- If the test pattern output has the same problem as the copy image:
  → Check the output system.
- If the test pattern output is normal:
  → Check the input system.
- Make a copy at a different zoom ratio.

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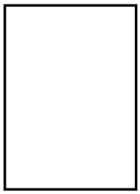
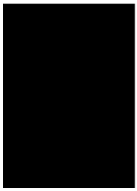
## 5-3. Troubleshooting Procedures by Image Failure

<Image Failure Samples>

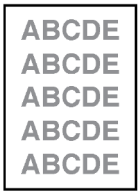
1. Blank copy



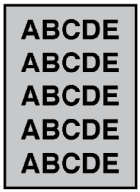
2. Black copy



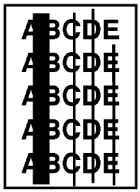
3. Low image density



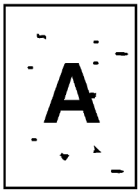

4. Foggy background



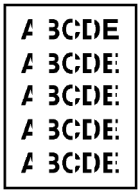

5. Black streaks or bands



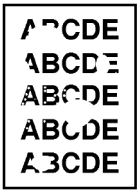
6. Black spots



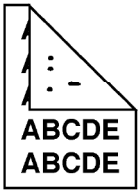

7. Blank streaks or bands



8. Void areas

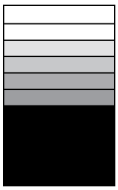


9. Smear on back




10. Uneven image density

11. Gradation reproduction failure



12. Rough image

13. Periodically uneven image

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**(1) Blank Copy**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is toner empty? | YES | Check Sub Hopper Toner Empty Switch S4 and change the Toner Bottle. |
| | 2 | Is the drive transmission mechanism to the Developing Unit in good condition? | NO | Check and change as necessary. |
| | 3 | Is the image transfer current terminal intact? | NO | Check and change as necessary. |
| | 4 | Does the laser shutter (the one located on the laser beam path between the PH Unit and PC Drum) open and close properly? | NO | Adjust so that the shutter opens and closes properly. |
| | 5 | Does the I/C Shutter open and close properly? | YES | Change HV1, PH Unit, or PWB-A, in that order. |
| | | | NO | Adjust so that the shutter opens and closes properly. |
| IR | 1 | Is the Scanner drive transmission mechanism in good condition? | NO | Check and change as necessary. |
| | 2 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 3 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(2) Black Copy**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the PC Drum charge voltage terminal in good condition? | NO | Check and change as necessary. |
| | 2 | Is the grid voltage terminal in good condition? | NO | Check and change as necessary. |
| | 3 | Is the developing bias terminal in good condition? | NO | Check and change as necessary. |
| | 4 | Does a black copy persist even after the I/C has been replaced with a new one? | YES | Change HV1 or PWB-A. |
| IR | 1 | Does the Exposure Lamp turn ON when "ON" is selected for "Lighting Exposure Lamp"? "Lighting Exposure Lamp" can be selected as follows: Tech. Rep. Mode → Movement Check → Scanner. | YES | Perform steps 4 and onward. |
| | | | NO | Check connectors and harnesses and perform steps 2 and 3. |
| | 2 | Does the voltage across CN13BCR-1 on BCR and GND change from DC24V to DC0V when step 1 is performed again? | NO | Change BCR, HGB, or UN2, in that order. |
| | 3 | Is an AC voltage output from INV to Exposure Lamp when step 1 is performed again? | YES | Change LA2. |
| | | | NO | Change INV. |
| | 4 | Are the mirrors and lens installed properly? | NO | Install them properly. |
| | 5 | Are the mirrors and lens dirty? | YES | Clean or change. |

**(3) Low Image Density**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Does the image get better when a copy is made with new paper loaded? | YES | Change the paper. Instruct the user on the storage of paper. |
| | 2 | Is toner empty? | YES | Check Sub Hopper Toner Empty Switch S4 and change the Toner Bottle. |
| | 3 | Is the image transfer current terminal intact? | NO | Check and change as necessary. |
| | 4 | Is the developing bias terminal intact? | NO | Check and change as necessary. |
| | 5 | Does the image density remain low even after the I/C has been replaced with a new one? | NO | This completes the procedure. |
| | 6 | Does the image density become higher when the "Image Density" value is changed toward the plus side? "Image Density" can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer. | YES | This completes the procedure. |
| | 7 | Does the image density become higher when the "VG Adjust" value is changed toward the plus side? "VG Adjust" can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer. | YES | This completes the procedure. |
| | | | NO | Change HV1, HGB, or UN2, in that order. |
| IR | 1 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 2 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(4) Foggy Background**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| —— | 1 | Is sunlight or any other extraneous light entering the copier? | YES | Protect the copier from extraneous light. |
| Engine | 1 | Is the PC Drum dirty with foreign matter? | YES | Clean the PC Drum. |
| | 2 | Is the PC Drum charge voltage terminal in good condition? | NO | Check and change as necessary. |
| | 3 | Is the grid voltage terminal in good condition? | NO | Check and change as necessary. |
| | 4 | Is the developing bias terminal in good condition? | NO | Check and change as necessary. |
| | 5 | Is the Charge Neutralizing Sheet voltage terminal in good condition? | NO | Check and change as necessary. |
| | 6 | Is Eraser Lamp LA1 dirty? | YES | Clean. |
| | 7 | Does foggy background persist even after the I/C has been replaced with a new one? | NO | This completes the procedure. |
| | 8 | Does foggy background persist when the "Image Density" value is changed toward the minus side? "Image Density" can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer. | NO | This completes the procedure. |
| | 9 | Does foggy background persist when the "VG Adjust" value is changed toward the minus side? "VG Adjust" can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer. | YES | Change HV1, PH Unit, or PWB-A, in that order. |
| | | | NO | This completes the procedure. |
| IR | 1 | Are the mirrors and lens dirty? | YES | Clean or change. |
| | 2 | Is the Exposure Lamp dirty or deteriorated? | YES | Clean or change. |
| | 3 | Do the connections between the Exposure Lamp and INV remain intact? | NO | Reconnect. |
| | 4 | Do the connections from INV to BCR remain intact? | NO | Reconnect. |
| | 5 | Do the connections from BCR to HGB remain intact? | NO | Reconnect. |
| | 6 | Do the connections from HGB to UN2 remain intact? | YES | Change INV, BCR, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(5) Black Streaks or Bands**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the PC Drum dirty? | YES | Clean the PC Drum. |
| | 2 | Has toner spilled from the I/C inside of the copier? | YES | Clean the interior and change I/C. |
| | 3 | Is the PC Drum charge voltage terminal in good condition? | NO | Check and change as necessary. |
| | 4 | Is the grid voltage terminal in good condition? | NO | Check and change as necessary. |
| | 5 | Are the Fusing Rollers dirty with foreign matter? | YES | Clean or change the Fusing Rollers. |
| | | | NO | Change I/C. |
| IR | 1 | Are the mirrors, lens, and Original Glass dirty with foreign matter? | YES | Clean the mirrors, lens, and Original Glass. |
| | 2 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 3 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(6) Black Spots**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the PC Drum dirty? | YES | Clean the PC Drum. |
| | 2 | Has toner spilled from the I/C inside of the copier? | YES | Clean the interior and change I/C. |
| | 3 | Is the PC Drum charge voltage terminal in good condition? | NO | Check and change as necessary. |
| | 4 | Is the grid voltage terminal in good condition? | NO | Check and change as necessary. |
| | 5 | Are the Fusing Rollers dirty with foreign matter? | YES | Clean or change the Fusing Rollers. |
| | | | NO | Change I/C. |
| IR | 1 | Are the mirrors, lens, and Original Glass dirty with foreign matter? | YES | Clean the mirrors, lens, and Original Glass. |
| | 2 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 3 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(7) Blank Streaks or Bands**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the PC Drum dirty with foreign matter? | YES | Clean the PC Drum. |
| | 2 | Is the image transfer current terminal intact? | YES | Check and change as necessary. |
| | 3 | Is the Image Transfer Roller dented or scratched? | YES | Change the Image Transfer Roller. |
| | 4 | Are the Fusing Rollers scratched or dirty? | YES | Clean or change the Fusing Rollers. |
| | 5 | Is the PH Unit window glass dirty? | YES | Clean the window glass. |
| | 6 | Is the light path between PH and PC dirty with dust? | YES | Remove dust. |
| | | | NO | Change the I/C. |
| IR | 1 | Is the Shading Sheet on the Original Glass dirty? | YES | Clean or change. |
| | 2 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 3 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(8) Void Areas**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Does the image get better when a copy is made with new paper loaded? | YES | Change the paper. Instruct the user on the storage of paper. |
| | 2 | Is the Image Transfer Roller installed correctly? | NO | Install correctly. |
| | 3 | Is the Image Transfer Roller dented or scratched? | YES | Change the Image Transfer Roller. |
| | 4 | Is the image transfer current terminal intact? | NO | Check and change as necessary. |
| | 5 | Are the Fusing Rollers scratched or deformed? | YES | Change the Fusing Rollers. |
| | | | NO | Change the I/C. |
| IR | 1 | Is the Original Glass dirty? | YES | Clean or change. |
| | 2 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 3 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(9) Smear on Back**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the Image Transfer Roller dirty? | YES | Clean or change. |
| | 2 | Has toner spilled from the I/C inside of the copier? | YES | Clean the interior and change I/C. |
| | 3 | Are the Fusing Rollers dirty? | YES | Clean or change the Fusing Rollers. |

**(10) Uneven Image Density**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the Image Transfer Roller dirty or deteriorated? | YES | Clean or change the Image Transfer Roller. |
| | 2 | Does the image get better when a copy is made with new paper loaded? | YES | Change the paper. Instruct the user on the storage of paper. |
| | | | NO | Change the I/C or PWB-A. |
| IR | 1 | Are the Original Glass, mirrors, and lens dirty with foreign matter? | YES | Clean the Original Glass, mirrors, and lens. |
| | 2 | Is the Shading Sheet on the Original Glass dirty? | YES | Clean or change. |
| | 3 | Is the Exposure Lamp dirty or deteriorated? | YES | Clean or change. |
| | 4 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 5 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(11) Gradation Reproduction Failure**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Does the image get better when a copy is made with new paper loaded? | YES | Change the paper. Instruct the user on the storage of paper. |
| | | | NO | Change PWB-A. |
| IR | 1 | Is the Shading Sheet dirty? | YES | Clean or change. |
| | 2 | Is the Original Glass dirty? | YES | Clean or change. |
| | 3 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 4 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(12) Rough Image**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the Image Transfer Roller dirty? | YES | Clean or change. |
| | 2 | Is the image transfer current terminal intact? | YES | Change HV1, I/C, PH Unit, or PWB-A, in that order. |
| | | | NO | Check and change as necessary. |
| IR | 1 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 2 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(13) Periodically Uneven Image**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the Developing Unit drive gear cracked or dirty with foreign matter? | YES | Clean or change. |
| | 2 | Is the PC Drum drive gear cracked or dirty with foreign matter? | YES | Clean or change. |
| | 3 | Is the Synchronizing Roller drive gear cracked or dirty with foreign matter? | YES | Clean or change. |
| | 4 | Is the Fusing Unit drive gear cracked or dirty with foreign matter? | YES | Clean or change. |
| | 5 | Is the PH Assy secured properly? | YES | Change the I/C or PWB-A. |
| | | | NO | Secure properly. |
| IR | 1 | Is the Scanner Motor drive gear cracked or dirty with foreign matter? | YES | Clean or change. |
| | 2 | Is the Scanner Motor secured properly? | NO | Secure properly. |
| | 3 | Is the Scanner secured properly? | NO | Secure properly. |
| | 4 | Are the Scanner Drive Cables wound properly? | NO | Wind the cables properly. |
| | 5 | Are the Scanner rails damaged or dirty with foreign matter? | YES | Clean or change. |
| | 6 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 7 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

# Di350

# SERVICE MANUAL

## [GENERAL]

# Safety Precautions for Inspection and Service

When performing inspection and service procedures, observe the following precautions to prevent accidents and ensure utmost safety.

* Depending on the model, some of the precautions given in the following do not apply.

Different markings are used to denote specific meanings as detailed below.

**WARNING** — Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION** — Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

The following graphic symbols are used to give instructions that need to be observed.

Used to call the service technician's attention to what is graphically represented inside the marking (including a warning).

Used to prohibit the service technician's from doing what is graphically represented inside the marking.

Used to instruct the service technician's to do what is graphically represented inside the marking.

## WARNING

1. Always observe precautions.
   - Parts requiring special attention in this product will include a label containing the mark shown on the left plus precautionary notes. Be sure to observe the precautions.
   - Be sure to observe the "Safety Information" given in the Operator's Manual.

2. Before starting the procedures, be sure to unplug the power cord.
   - This product contains a high-voltage unit and a circuit with a large current capacity that may cause an electric shock or burn.
   - The product also contains parts that can jerk suddenly and cause injury.
   - If this product uses a laser, laser beam leakage may cause eye damage or blindness.

3. Use the specified parts.
   - For replacement parts, always use the genuine parts specified in the manufacturer's parts manual. Installing a wrong or unauthorized part could cause dielectric breakdown, overload, or undermine safety devices resulting in possible electric shock or fire.
   - Replace a blown electrical fuse or thermal fuse with its corresponding genuine part specified in the manufacturer's parts manual. Installing a fuse of a different make or rating could lead to a possible fire. If a thermal fuse blows frequently, the temperature control system may have a problem and action must be taken to eliminate the cause of the problem.

4. Handle the power cord with care and never use a multiple outlet.

- Do not break, crush or otherwise damage the power cord. Placing a heavy object on the power cord, or pulling or bending it may damage it, resulting in a possible fire or electric shock.
- Do not use a multiple outlet to which any other appliance or machine is connected.
- Be sure the power outlet meets or exceeds the specified capacity.

5. Be careful with the high-voltage parts.

- A part marked with the symbol shown on the left carries a high voltage. Touching it could result in an electric shock or burn. Be sure to unplug the power cord before servicing this part or the parts near it.

6. Do not work with wet hands.

- Do not unplug or plug in the power cord, or perform any kind of service or inspection with wet hands. Doing so could result in an electric shock.

7. Do not touch a high-temperature part.

- A part marked with the symbol shown on the left and other parts such as the exposure lamp and fusing roller can be very hot while the machine is energized. Touching them may result in a burn.
- Wait until these parts have cooled down before replacing them or any surrounding parts.

8. Maintain a grounded connection at all times. (This item may not apply in the USA.)

- Be sure to connect the ground wire to the ground terminal even when performing an inspection or repair. Without proper grounding, electrical leakage could result in an electric shock or fire.
- Never connect the ground wire to a gas pipe, water pipe, telephone ground wire, or a lightning conductor.

9. Do not remodel the product.

- Modifying this product in a manner not authorized by the manufacturer may result in a fire or electric shock. If this product uses a laser, laser beam leakage may cause eye damage or blindness.

10. Restore all parts and harnesses to their original positions.

- To promote safety and prevent product damage, make sure the harnesses are returned to their original positions and properly secured in their clamps and saddles in order to avoid hot parts, high-voltage parts, sharp edges, or being crushed.
- To promote safety, make sure that all tubing and other insulating materials are returned to their original positions. Make sure that floating components mounted on the circuit boards are at their correct distance and position off the boards.

## CAUTION

1. Precautions for Service Jobs

- A toothed washer and spring washer, if used originally, must be reinstalled. Omitting them may result in contact failure which could cause an electric shock or fire.
- When reassembling parts, make sure that the correct screws (size, type) are used in the correct places. Using the wrong screw could lead to stripped threads, poorly secured parts, poor insulating or grounding, and result in a malfunction, electric shock or injury.

- Take great care to avoid personal injury from possible burrs and sharp edges on the parts, frames and chassis of the product.
- When moving the product or removing an option, use care not to injure your back or allow your hands to be caught in mechanisms.

2. Precautions for Servicing with Covers and Parts Removed

- Wherever feasible, keep all parts and covers mounted when energizing the product.
- If energizing the product with a cover removed is absolutely unavoidable, do not touch any exposed live parts and use care not to allow your clothing to be caught in the moving parts. Never leave a product in this condition unattended.
- Never place disassembled parts or a container of liquid on the product. Parts falling into, or the liquid spilling inside, the mechanism could result in an electric shock or fire.

- Never use a flammable spray near the product. This could result in a fire.
- Make sure the power cord is unplugged before removing or installing circuit boards or plugging in or unplugging connectors.
- Always use the interlock switch actuating jig to actuate an interlock switch when a cover is opened or removed. The use of folded paper or some other object may damage the interlock switch mechanism, possibly resulting in an electric shock, injury or blindness.

3. Precautions for the Working Environment

- The product must be placed on a flat, level surface that is stable and secure.
- Never place this product or its parts on an unsteady or tilting workbench when servicing.
- Provide good ventilation at regular intervals if a service job must be done in a confined space for a long period of time.
- Avoid dusty locations and places exposed to oil or steam.
- Avoid working positions that may block the ventilation ports of the product.

4. Precautions for Handling Batteries

- Replace a rundown battery with the same type as specified in the manufacturer's parts manual.
- Before installing a new battery, make sure of the correct polarity of the installation or the battery could burst.
- Dispose of used batteries according to the local regulations. Never dispose of them at the user's premises or attempt to try to discharge one.

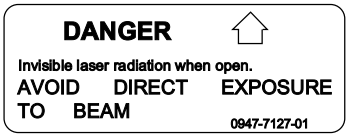
5. Precautions for the Laser Beam (Only for Products Employing a Laser)

- Removing the cover marked with the following caution label could lead to possible exposure to the laser beam, resulting in eye damage or blindness. Be sure to unplug the power cord before removing this cover.
- If removing this cover while the power is ON is unavoidable, be sure to wear protective laser goggles that meet specifications.
- Make sure that no one enters the room when the machine is in this condition.
- When handling the laser unit, observe the "Precautions for Handling Laser Equipment."

.

注意- ここを開くと不可視レーザ光が出ます。ビームを直接見たり、触れたりしないでください。
CAUTION- INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
VORSICHT- UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
ADVARSEL- USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEN
ADVARSEL- USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
VARNING- OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD STRÅLEN ÄR FARLIG
注意： 当您打开这里时，会出现肉眼看不见的激光射线，请不要直视或接触光线。

1167P001AA




1144D270AA

## Other Precautions

- To reassemble the product, reverse the order of disassembly unless otherwise specified.
- While the product is energized, do not unplug or plug connectors into the circuit boards or harnesses.
- The magnet roller generates a strong magnetic field. Do not bring it near a watch, floppy disk, magnetic card, or CRT tube.
- An air gun and vacuum cleaner generates a strong electrostatic charge that can destroy the ATDC sensor and other sensors. Before cleaning a component with one of these devices, be sure to remove all the sensors. Otherwise, use a blower brush and cloth when cleaning parts.
- When handling circuit boards with MOS ICs, observe the "INSTRUCTIONS FOR HANDLING THE PWBs WITH MOS ICs" (applicable only to the products using MOS ICs).
- The PC Drum is a very delicate component. Observe the precautions given in "HANDLING OF THE PC DRUM" because mishandling may result in serious image problems.
- Note that replacement of a circuit board may call for readjustments or resetting of particular items, or software installation.
- After completing a service job, perform a safety check. Make sure that all parts, wiring and screws are returned to their original positions.
- Check the area surrounding the service site for any signs of damage, wear or need of repair.
- Do not pull out the toner hopper while the toner bottle is turning. This could result in a damaged hopper motor or locking mechanism.
- If the product is to be run with the front door open, make sure that the toner hopper is in the locked position.

## Used Batteries Precautions

ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Germany

VORSICHT!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

France

ATTENTION

Ily a danger d'explosion s'ily a remplacement incorrec de la batterie.
Remplacer uniquement avec une batterie du meme type ou d'un type équivalent recommande par le constructueur.
Mettre au rebut les batteries usageés conformément aux instructions du fabricant.

Denmark

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Norway

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

Sweden

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

Finland

VAROITUS

Paristo voi räjähtää, los se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden mukaisesti.

# Di350

## GENERAL

# CONTENTS

1. SAFETY INFORMATION ..... G-1
2. SPECIFICATIONS ..... G-8
3. PRECAUTIONS FOR INSTALLATION ..... G-10
4. PRECAUTIONS FOR USE ..... G-11
5. HANDLING OF THE CONSUMABLES ..... G-12
6. OTHER PRECAUTIONS ..... G-12
7. SYSTEM OPTIONS ..... G-13

1171SBG0100A

# 1 SAFETY INFORMATION

## Laser Safety

This is a digital machine which prints by means of a laser. There is no possibility of danger from the laser, provided the machine is operated according to the instructions in this manual.

Since radiation emitted by the laser is completely confined within protective housing, the laser beam cannot escape from the machine during any phase of user operation.

This machine is certified as a Class 1 product. This means the machine does not produce hazardous laser radiation.

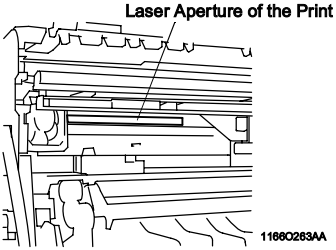
**CAUTION: The use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure. Because of this, Minolta strongly recommends that you operate your copy machine only as described in this documentation.**

## Internal Laser Radiation

Maximum Average Radiation Power: 36.7μW at laser aperture of the print head unit

Wavelength: 770-810nm

This product employs a Class IIIb Laser Diode that emits an invisible laser beam.
The Laser Diode and Scanning Polygon Mirror are incorporated in the print head unit.
The print head unit is NOT A FIELD SERVICE ITEM.
Therefore, the print head unit should not be opened under any circumstances.




This figure shows the view inside the Right Side Door with the Imaging Unit removed.

## For United States

CDRH regulation

This copier is certified as a Class 1 Laser product under the Radiation Performance Standard according to the Food, Drug and Cosmetic Act of 1990. Compliance is mandatory for Laser products marketed in the United States and is reported to the Center for Devices and Radiological Health (CDRH) of the U.S. Food and Drug Administration of the U.S. Department of Health and Human Services (DHHS). This means that the device does not produce hazardous laser radiation.

The label shown on page G-3 indicates compliance with the CDRH regulations and must be attached to laser products marketed in the United States.

**CAUTION:** Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

This is a semiconductor laser. The maximum power of the laser diode is 5mW and the wavelength is 770-810nm.

**For Europe**

**CAUTION:** Use of controls, adjustments or performance of procedures other than those specified in this manual may result in hazardous radiation exposure.

This is a semiconductor laser. The maximum power of the laser diode is 5mW and the wavelength is 770-810nm.

**For Denmark**

**ADVARSEL**
Usynlig laserstråling ved åbning, når sikkerhedsafbrydere er ude af funktion.
Undgå udsættelse for stråling.

Klasse 1 laser produkt der opfylder IEC60825 sikkerheds kravene.

**For Finland**

**LUOKAN 1 LASERLAITE**

**VAROITUS**
Laitteen käyttäminen muulla kuin tässä käyttöohjeessa mainitulla tavalla saattaa altistaa käyttäjän turvallisuusluokan 1 ylittävälle näkymättömälle lasersäteilylle.

**VARO**
Avattaessa ja suojalukitus ohitettaessa olet alttiina näkymättomälle lasersäteilylle. Älä katso säteeseen.

**For Sweden**

**KLASS 1 LASER APPARAT**

**VARNING**
Om apparaten används på annat sätt än i denna bruksanvisning specificerats, kan användaren utsättas för osynlig laserstrålning, som överskrider gränsen för laserklass 1.

**VARNING**
Osynlig laserstråining när denna del är öppnad och spärren är urkopplad. Betrakta ej stråien.

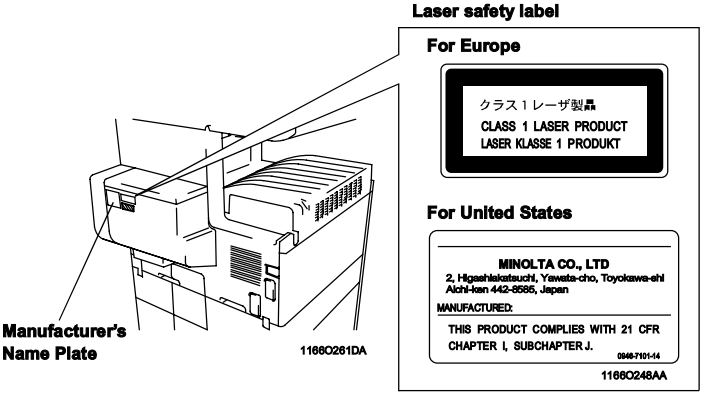
**For Norway**

**ADVERSEL**
Dersom apparatet brukes på annen måte enn spesifisert i denne bruksanvisning, kan brukeren utsettes för unsynlig laserstrålning, som overskrider grensen for laser klass 1.

Dette en halveder laser. Maksimal effekt till laserdiode er 5mW og bølgelengde er 770-810nm.

## Laser Safety Label

A laser safety label is attached to the outside of the copy machine as shown below.




The Manufacturer's Name Plate is affixed at the position illustrated above.
Please write down the Model Name and Serial No. of your copier here.

| |
|---|
| Model: |
| Serial No.: |

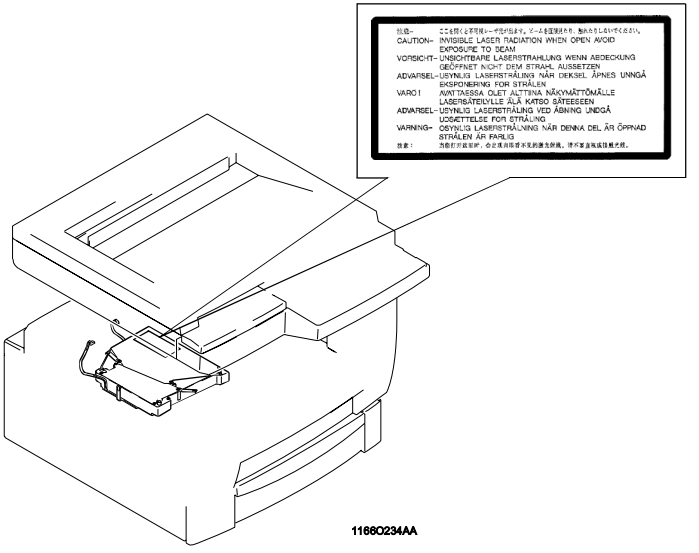
## Label inside copy machine

The following laser safety label will be attached inside the copy machine as shown below.

**Please read the following for your own protection.**

**⚠ Caution**

Opening the cover indicated by the Caution label may expose you to harmful laser radiation which could cause damage or loss of eyesight. Do not open the cover when the power is on.


CAUTION- INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
VORSICHT- UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
ADVARSEL- USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEEN
ADVARSEL- USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
VARNING- OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD STRÅLEN ÄR FARLIG
1166O234AA

ALL Areas

CAUTION
Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type
recommended by the manufacturer.
Dispose of used batteries according
to the manufacturer's instructions.

Germany only

VORSICHT!
Explosinsgefahr bei unsachgemäßen austausch der
batterie. Ersatz nur durch denselben oder einen vom hersteller
empfohlenen ähnlichen typ. Entsorgung gebrauchter batterien
nach angaben des herstellers.

Denmark only

ADVARSEL!
Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering
Udskiftning må kun ske med batteri
af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Norway only

ADVARSEL
Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende
type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens
instruksjoner.

Sweden only

VARNING
Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent
typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens
instruktion.

Finland only

VAROITUS
Paristo voi räjähtää, los se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan
tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden
mukaisesti.

ALL Areas

CAUTION

"Replace only with the same or equivalent type recommended by the manufacturer. Dispose of used IC Package according to the manufacturer's instructions."

Germany only

VORSICHT!

⇒"Austausch nur durch denselben oder einen vom Hersteller empfohlenen, gleichwertigen typ. Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

## Service Precautions

**(1) Precautions**

Refer to DISASSEMBLY/CLEANING for the Disassembly procedure.

1. When unplugging connectors on the P.W.B.s themselves, always make sure the power is OFF first. Be sure to unplug the copier before disassembling and cleaning.
2. Always unplug connectors by holding the connector housing. Pulling on the wires can lead to problems with poor contact.
3. It is recommended that a body ground not be used when carrying out any troubleshooting procedure. Be sure to ground DC lines to a ground test point on the P.W.B.

**(2) At Replacement/Adjustment/Cleaning**

1. Be sure to handle the Fusing Unit carefully. It remains hot a while after the copier is turned off.
2. Do not disassemble the Imaging Cartridge or Print Head Unit.
3. Do not expose the PC Drum of the Imaging Cartridge to direct sunlight or to room lighting for more than 5 minutes.
4. Turn off the power before removing the Print Head Unit to protect the eyes from possible exposure to the laser beam.
5. Use only a Fuse of the indicated rating.

**(3) During Operation**

1. Keep your hands, clothing, etc. well away from operating or rotating parts.
2. Never touch the terminals of electrical parts or high voltage parts.
3. This copier uses an invisible laser beam. To prevent a laser beam leak, the copier performs a trial run to make sure the covers are in position.

## Handling the P.W.B.

Observe the following precautions when handling a P.W.B. with ICs.

**(1) During Transportation/Storage**

1. During transport and storage, P.W.B.s should be kept in conductive bags or on mats and not taken out unless absolutely necessary.
2. P.W.B.s should be stored in a place where direct sunlight does not strike them.
3. Do not touch IC terminals with your hands.

**(2) At Replacement**

1. Before removing connectors from a P.W.B., make sure the copier has been unplugged.
2. When P.W.B.s are taken out of their conductive bags or off their mats, hold them by their edges to avoid touching the terminals or the patterned surfaces.
3. Before installing connectors on a P.W.B., make sure the copier has been unplugged.

1171SBG0200A

# 2 SPECIFICATIONS

| | | |
|---|---|---|
| TYPE | : | Console/Desktop Type |
| PHOTOCONDUCTOR | : | Organic Photoconductor |
| COPYING SYSTEM | : | Electrostatic Dry Powdered Image Transfer to Plain Paper with a Laser |
| ORIGINAL SCANNING RESOLUTION | : | 600 dpi |
| PAPER FEEDING SYSTEM | : | 3-way system ┬ Manual Feed Tray: Single sheet feeding<br>├ Multi-Purpose (MP) Cassette:<br>Plain paper: Approx. 250 sheets<br>Special paper: Approx. 20 sheets<br>└ 500-Sheet Cassette: Approx. 500 sheets |
| EXPOSURE SYSTEM | : | Mirror Scanning, Slit Exposure |
| DEVELOPING SYSTEM | : | MT-HG System |
| CHARGING SYSTEM | : | Comb Electrode (1) DC Negative Corona with Scorotron System |
| IMAGE TRANSFER | : | Roller Image Transfer |
| PAPER SEPARATING SYSTEM | : | Paper Separator Fingers and Charge Neutralizing Plate |
| FUSING SYSTEM | : | Heat Roller |
| PAPER DISCHARGING SYSTEM | : | Charge Neutralizing Brush |
| MAXIMUM ORIGINAL SIZE | : | A3L, 11" × 17"L |

COPY MEDIUM

| Paper Source | | MP Cassette | Manual Feed Tray |
|---|---|---|---|
| Medium | Plain paper (60 to 90 g/m$^2$) | ○ | ○ |
| | Transparencies | ○ | ○ |
| | Thick paper (91 to 157 g/m$^2$) | ○ | ○ |
| | Postcards (190 g/m$^2$) | ○ | ○ |
| | Recycled paper | ○ | ○ |
| Dimensions | Maximum (Width × Length) | 297 × 432 mm | 297 × 432 mm |
| | Minimum (Width × Length) | 90 × 140 mm | 90 × 140 mm |

m: Permissible –: Not permissible

| | | |
|---|---|---|
| MULTIPLE COPIES | : | 1 to 999 |
| WARMING-UP TIME | : | 70 sec. or less with room temperature of 23°C and rated power voltage |
| FIRST COPY TIME | : | 4.7 sec. (A4C, MP Cassette, full size mode)<br>4.7 sec. (8-1/2" × 11"C, MP Cassette, full size mode) |

CONTINUOUS COPY SPEED (copies/min.)

- Metric -

| Size | Speed |
|---|---|
| A3L | 20 |
| B4L | 23 |
| A4L | 27 |
| A4C | 35 |
| B5L | 30 |
| B5C | 40 |

- Inch -

| Size | Speed |
|---|---|
| 11" × 17"L | 20 |
| 8-1/2" × 14"L | 23 |
| 8-1/2" × 11"L | 28 |
| 8-1/2" × 11"C | 35 |

ZOOM RATIOS

| | | - Metric - | - Inch - |
|---|---|---|---|
| Fixed | Full Size | × 1.000 | × 1.000 |
| | Enlargement | × 2.000 | × 2.000 |
| | | × 1.414 | × 1.545 |
| | | × 1.224 | × 1.294 |
| | | × 1.154 | × 1.214 |
| | Reduction | × 0.866 | × 0.785 |
| | | × 0.816 | × 0.733 |
| | | × 0.707 | × 0.647 |
| | | × 0.500 | × 0.500 |
| Variable | 25% to 400% (in 0.1% increments) | | |

LENS : Through Lens (F = 4.0, f = 62 mm)
EXPOSURE LAMP : Fluorescent Lamp
FUSING TEMPERATURE : 190°C

POWER/CURRENT CONSUMPTION (Copier Only)

| Exposure Lamp (Rating) | Fusing Roller Heater Lamp (Rating) | Max. Power Consumption (full system) | Max. Current Consumption (full system) |
|---|---|---|---|
| 24V<br>20W | 775W | 1050W | 120V, 10A<br>230V, 5A |

POWER REQUIREMENTS : 120V, 230V, 50/60Hz

ENVIRONMENTAL CONDITIONS

| | |
|---|---|
| Temperature | 10 to 32°C with a fluctuation of 10°C or less per hour |
| Humidity | 15 to 85% RH with a fluctuation of 10% RH or less per hour |
| Ambient Illumination | 3,000 lux or less |
| Levelness | 1° (1.75 mm/100 mm) |

DIMENSIONS : Width ... 616 mm, 24-1/4"
Depth ... 707 mm, 27-3/4"
Height ... 635 mm, 25"

WEIGHT : 55.5 kg, 122-1/4 lbs.

1171SBG0300A

# 3 PRECAUTIONS FOR INSTALLATION

**Installation Site**

To ensure safety and utmost performance of the copier, the copier should NOT be used in a place:

- Where it will be subjected to extremely high or low temperature or humidity.
- Which is exposed to direct sunlight.
- Which is in the direct air stream of an air conditioner, heater or ventilator.
- Which puts the operator in the direct stream of exhaust from the copier.
- Which has poor ventilation.
- Where ammonia gas might be generated.
- Which does not have a stable, level floor.
- Where it will be subjected to sudden fluctuations in either temperature or humidity. If a cold room is quickly heated, condensation forms inside the copier, resulting in blank spots in the copy.
- Which is near any kind of heating device.
- Where it may be splashed with water.
- Which is dirty or where it will receive undue vibration.
- Which is near volatile flammables or curtains.

**Power Source**

Use an outlet with a capacity of 120V/10A, or 220V to 240V/5A or more.

- If any other electrical equipment is sourced from the same power outlet, make sure that the capacity of the outlet is not exceeded.
- Use a power source with little voltage fluctuation.
- Never connect by means of a multiple socket any other appliances or machines to the outlet being used for the copier.
- Make the following checks at frequent intervals:
  ✱Is the power plug abnormally hot?
  ✱Are there any cracks or scrapes in the cord?
  ✱Has the power plug been inserted fully into the outlet?
  ✱Does something, including the copier itself, ride on the power cord?
- Ensure that the copier does not ride on the power cord or communications cable of other electrical equipment, and that it does not become wedged into or underneath the mechanism.

**Grounding**

To prevent receiving electrical shocks in the case of electrical leakage, always ground the copier.

- Connect the ground wire to:
  ✱The ground terminal of the outlet.
  ✱A grounding contact which complies with the local electrical standards.
- Never connect the ground wire to a gas pipe, the ground wire for a telephone, or a water pipe.

1171SBG0400A

# 4 PRECAUTIONS FOR USE

To ensure that the copier is used in an optimum condition, observe the following precautions.

- Never place a heavy object on the copier or subject the copier to shocks.
- Insert the power plug all the way into the outlet.
- Do not attempt to remove any panel or cover which is secured while the copier is making copies.
- Do not turn OFF the Power Switch while the copier is making copies.
- Provide good ventilation when making a large number of copies continuously.
- Never use flammable sprays near the copier.
- If the copier becomes inordinately hot or produces abnormal noise, turn it OFF and unplug it.
- Do not turn ON the Power Switch at the same time when you plug the power cord into the outlet.
- When unplugging the power cord, do not pull on the cord; hold the plug and pull it out.
- Do not bring any magnetized object near the copier.
- Do not place a vase or vessel containing water on the copier.
- Be sure to turn OFF the Power Switch at the end of the workday or upon power failure.
- Use care not to drop paper clips, staples, or other small pieces of metal into the copier.

**Operating Environment**

The operating environmental requirements of the copier are as follows:

- Temperature: 10°C to 32°C with a fluctuation of 10°C per hour
- Humidity: 15% to 85% RH with a fluctuation of 10% RH per hour

**Power Requirements**

The power source voltage requirements are as follows:

- Voltage Fluctuation: AC120/230V
  ±10% (Copying performance assured)
  +10% -15% (Paper feeding performance assured)
- Frequency Fluctuation: 50/60 Hz ±0.3%

1171SBG0500A

## 5 HANDLING OF THE CONSUMABLES

Before using any consumable, always read the label on the container carefully.

- Use the right toner. The applicable copier model name is indicated on the toner bottle.
- Paper is easily damaged by dampness. To prevent absorption of moisture, store paper, which has been removed from its wrapper but not loaded into the drawer, in a sealed plastic bag in a cool, dark place.
- Keep consumables out of the reach of children.
- Do not touch the PC Drum with bare hands.
- Store the paper, toner, and other consumables in a place free from direct sunlight and away from any heating apparatus.
- The same sized paper is of two kinds, short grain and long grain. Short grain paper should only be fed through the copier crosswise, long grain paper should only be fed lengthwise.
- If your hands become soiled with toner, wash them with soap and water immediately.
- Do not throw away any used consumables (PC Drum, starter, toner, etc.). They are to be collected.

---

*NOTE*

*Do not burn, bury in the ground, or throw into the water any consumables (PC Drum, starter, toner, etc.).*

---

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## 6 OTHER PRECAUTIONS

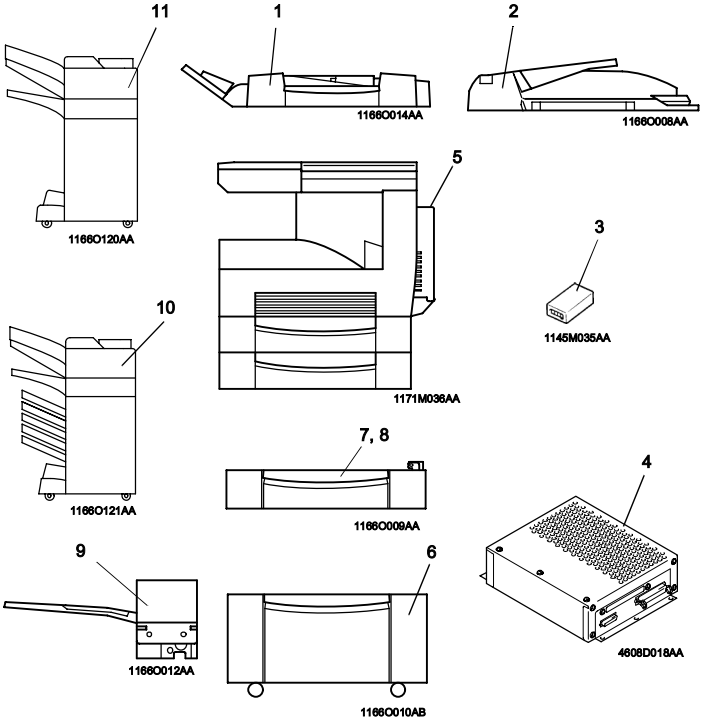
The Print Head Unit of this copier uses a laser diode that emits a laser beam. Use the following precautions when performing service jobs at the users' premises.

- When a service job needs to be performed in the laser beam path, such as when working around the Print Head Unit and PC Drum, be sure first to turn the copier OFF.
- If the job requires that the power cord be left plugged in, observe the following precautions

1. Take off your watch, ring, and any other reflective object and wear laser protective goggles.
2. At the job site, select a place that is as far as possible away from the users and that is enclosed by walls.
3. Do not bring a highly reflective tool into the laser beam path during the service job.

1171SBG0700A

# 7 SYSTEM OPTIONS




1. Duplexing Document Feeder (AFR-14)
2. Automatic Document Feeder (AF-7)
3. Plug-In Counter
4. Printer Controller (Pi3500)
5. Duplex Unit (AD-10) ✱
6. Large Capacity Cabinet (PF-106)
7. Paper Feed Unit (PF-108)
8. Paper Feed Unit (PF-110)
9. Job Tray (JS-200)
10. Mailbin Finisher (FN-500)
11. Finisher (FN-100)

✱ See the option service manual for the details of AD-10.

# Di350

## MECHANICAL/ ELECTRICAL

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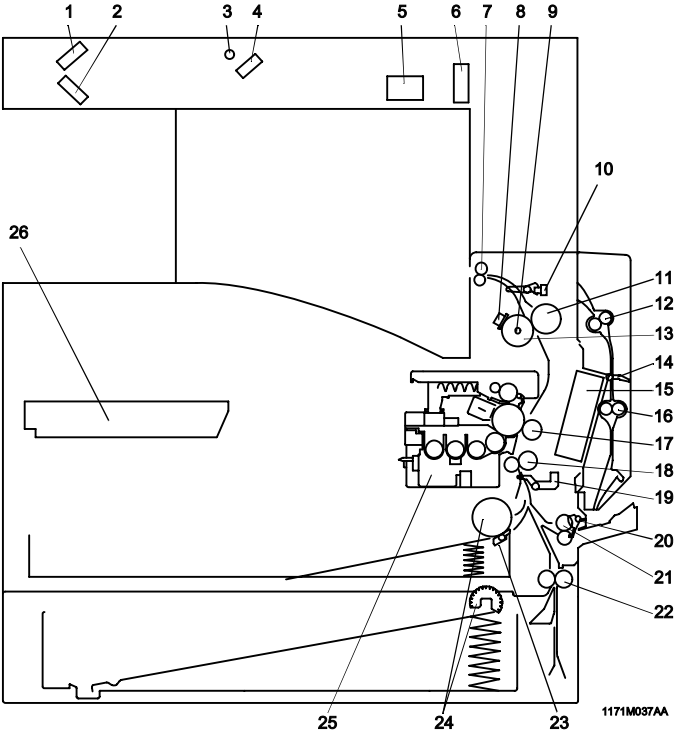
# 1 CROSS-SECTIONAL VIEW




1. 2nd Mirror
2. 3rd Mirror
3. Exposure Lamp
4. 1st Mirror
5. Lens
6. CCD Unit
7. Paper Exit Roller
8. Fusing Roller Thermostat (TS1)
9. Fusing Roller Heater Lamp (H1)
10. Paper Exit Sensor (PC3)
11. Right Fusing Roller
12. Duplex Unit Transport Roller 1
13. Left Fusing Roller
14. Duplex Unit Transport Sensor (PI1)
15. Fusing Cooling Fan Motor (M3)
16. Duplex Unit Transport Roller 2
17. Image Transfer Roller
18. Synchronizing Roller
19. Synchronizing Roller Sensor (PC2)
20. Manual Feed Paper Take-Up Sensor (PC8)
21. Manual Feed Paper Take-Up Roll
22. Vertical Transport Roller
23. Paper Separator Pad
24. Paper Take-Up Roll
25. Imaging Cartridge (I/C)
26. PH Unit

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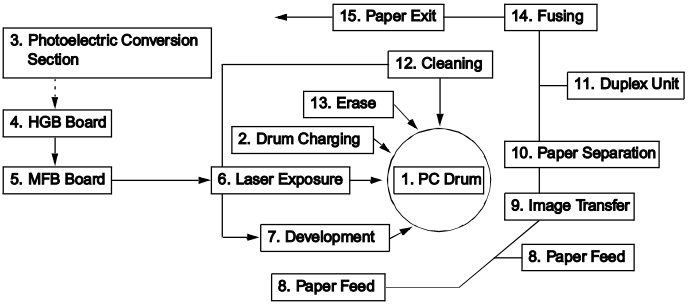
# 2 COPYING PROCESS




1. PC Drum
- The drum is an aluminum cylinder coated with photosensitive material on which an electrostatic latent image is produced.

2. Drum Charging
- A scorotron charger employing a comb electrode generates a negative DC charged layer on the surface of the PC Drum.

3. Photoelectric Conversion Section
- The Exposure Lamp directs light onto the original. The light reflected off the original is directed and resized by the mirrors and lens so as to produce a reduced-size image on the CCD Sensor.

4. HGB Board
- Converts an electric signal into a corresponding 8-bit digital image signal (A/D conversion), makes various corrections, and outputs the results to the MFB Board.

5. MFB Board
- Compresses the image data received from the HGB Board, stores it, and uncompresses it.

6. Laser Exposure
- The laser beam emitted from the LD (laser diode) strikes the surface of the PC Drum, creating an electrostatic latent image.

7. Development
- Negatively charged toner adheres to the latent image on the PC Drum surface, creating a visible image.

8. Paper Feed
- Feeds sheets of paper from the appropriate paper source.

9. Image Transfer
- An Image Transfer Roller is used. A positive charge applied to the roller causes the visible image on the surface of the PC Drum to transfer onto the front side of the paper.

10. Paper Separation
- The PC Drum Separator Fingers remove paper from the surface of the PC Drum.

11. Duplex Unit
- Makes 2-sided copies.

12. Cleaning
- The Cleaning Blade scrapes residual toner off the surface of the PC Drum and the toner is recycled back to the Developing Unit.

13. Erase
- The PC Drum is exposed to light, which effectively removes any residual charge from the drum surface.

14. Fusing
- Heat and pressure applied by the Right and Left Fusing Rollers fuse toner on the paper.

15. Paper Exit
- Feeds paper out of the copier.

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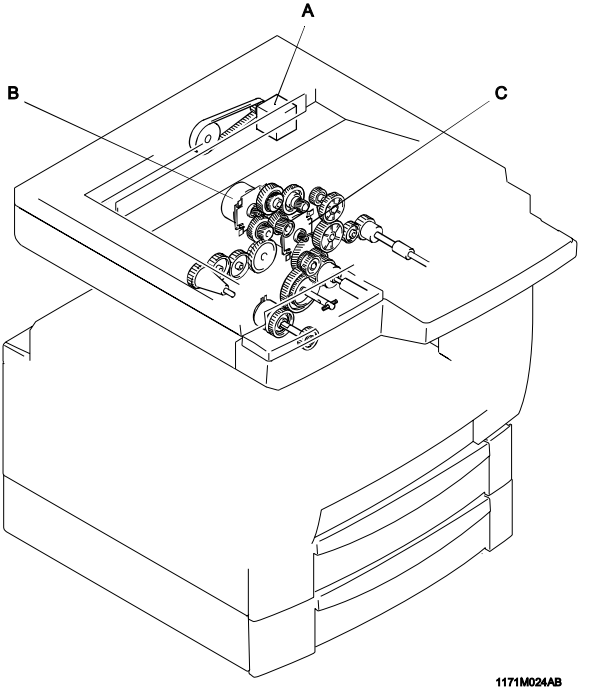
# 3 DRIVE SYSTEM




A. Scanner Motor (M5)
Drives the Scanner and 2nd/3rd Mirrors Carriage.
B. I/C Motor (M1)
Drives the I/C Unit.
C. Main Motor (M2)
Drives the Paper Take-Up Roll, Manual Feed Paper Take-Up Roll, Synchronizing Roller, Image Transfer Roller, and Fusing Unit.

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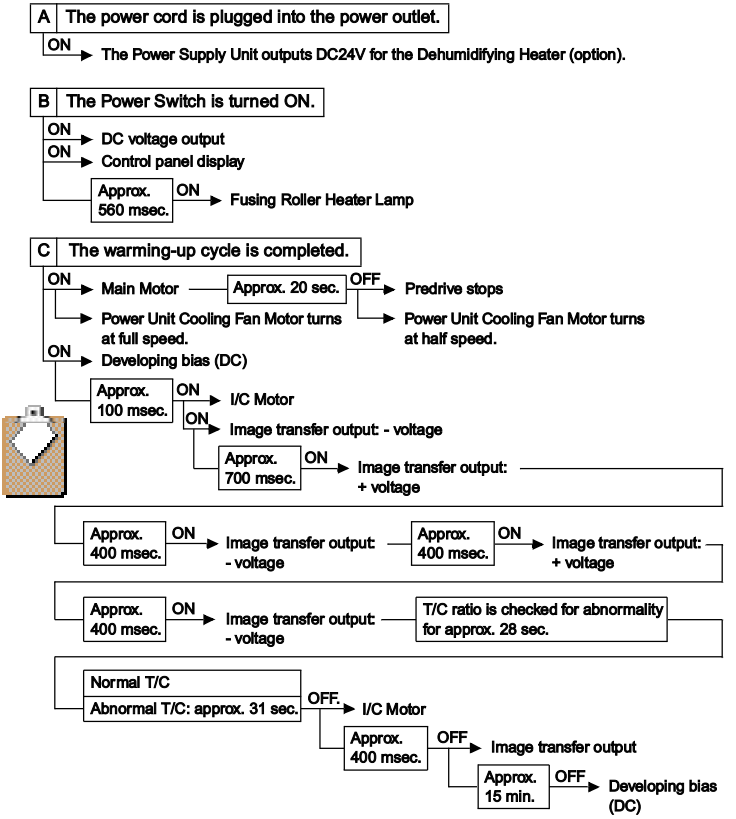
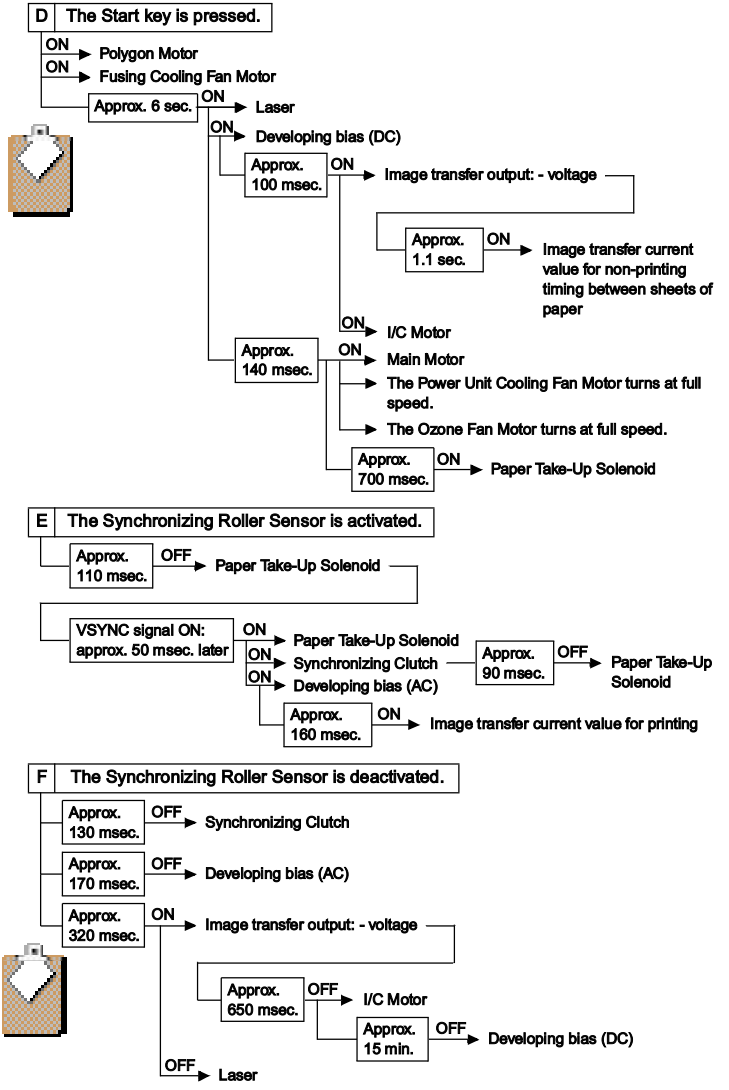
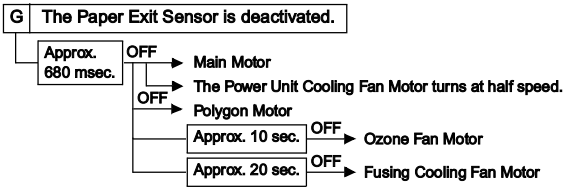
# 4 OPERATING SEQUENCE




D The Start key is pressed.
ON Polygon Motor
ON Fusing Cooling Fan Motor
Approx. 6 sec. ON Laser
ON Developing bias (DC)
Approx. 100 msec. ON Image transfer output: - voltage
Approx. 1.1 sec. ON Image transfer current value for non-printing timing between sheets of paper
ON I/C Motor
Approx. 140 msec. ON Main Motor
The Power Unit Cooling Fan Motor turns at full speed.
The Ozone Fan Motor turns at full speed.
Approx. 700 msec. ON Paper Take-Up Solenoid
E The Synchronizing Roller Sensor is activated.
Approx. 110 msec. OFF Paper Take-Up Solenoid
VSYNC signal ON: approx. 50 msec. later ON Paper Take-Up Solenoid
ON Synchronizing Clutch
ON Developing bias (AC)
Approx. 90 msec. OFF Paper Take-Up Solenoid
Approx. 160 msec. ON Image transfer current value for printing
F The Synchronizing Roller Sensor is deactivated.
Approx. 130 msec. OFF Synchronizing Clutch
Approx. 170 msec. OFF Developing bias (AC)
Approx. 320 msec. ON Image transfer output: - voltage
Approx. 650 msec. OFF I/C Motor
Approx. 15 min. OFF Developing bias (DC)
OFF Laser


G
The Paper Exit Sensor is deactivated.
Approx. 680 msec.
OFF
Main Motor
The Power Unit Cooling Fan Motor turns at half speed.
OFF
Polygon Motor
Approx. 10 sec.
OFF
Ozone Fan Motor
Approx. 20 sec.
OFF
Fusing Cooling Fan Motor

1171SBM0500A

# 5 CPU OVERRUN MONITOR FUNCTION

- CPU Overrun Monitor Function (Watchdog Function)
  The watchdog function is a self-monitoring function that determines whether any of the CPUs mounted on the control board overrun.
- If this function detects that a CPU overruns, the copier automatically resets the CPU, thereby restarting the logic circuit and mechanism.
- Even if a copier CPU operates erratically due to electrical noise, therefore, the copier is able to recover from the faulty condition so that the number of visits made by the Tech. Rep. for CPU overrun can be minimized.

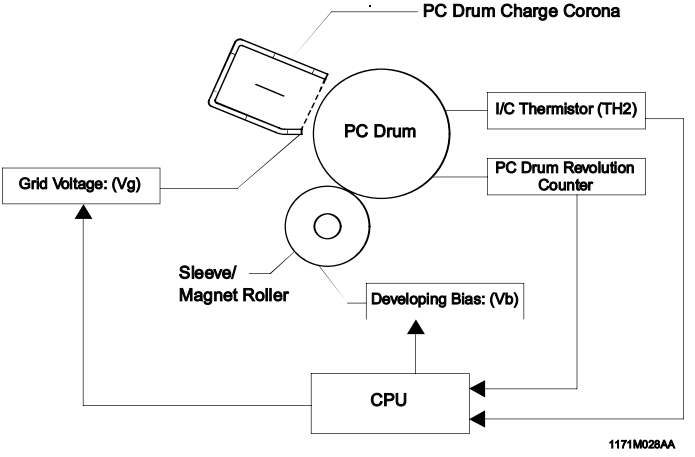
- Processing performed during watchdog function:
  If a faulty condition is detected, the copier resets the CPU and performs a restart sequence. Since this sequence of operations is performed even during a copy cycle, the copier detects a sheet or sheets of paper left inside it as a misfeed while it is being restarted.

1171SBM0600A

# 6 IMAGE STABILIZATION SYSTEM

- The following image stabilization controls are provided to ensure stabilized copy image.

| Item | Purpose | Control |
|---|---|---|
| PC Drum temperature correction | To compensate for any change in ID due to changing PC Drum temperatures. | The I/C Thermistor is used to detect temperature and, according to the detected temperature, Vg/Vb is corrected. |
| PC Drum deterioration correction | To compensate for degraded sensitivity caused by a deteriorating PC Drum. | Corrects Vg according to the period of time during which the PC Drum has turned. |



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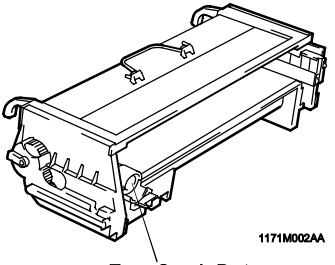
# 7 IMAGING CARTRIDGE (I/C)

- This copier employs an Imaging Cartridge ("I/C" in this manual) that contains a PC Drum, PC Drum Charge Corona, Developing Unit, and Cleaning Unit as one unit.

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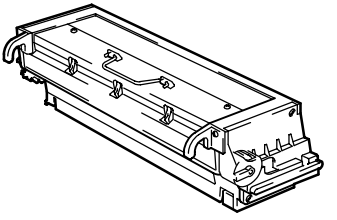
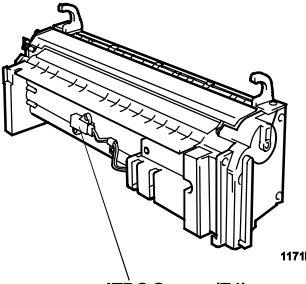


1171M001AA

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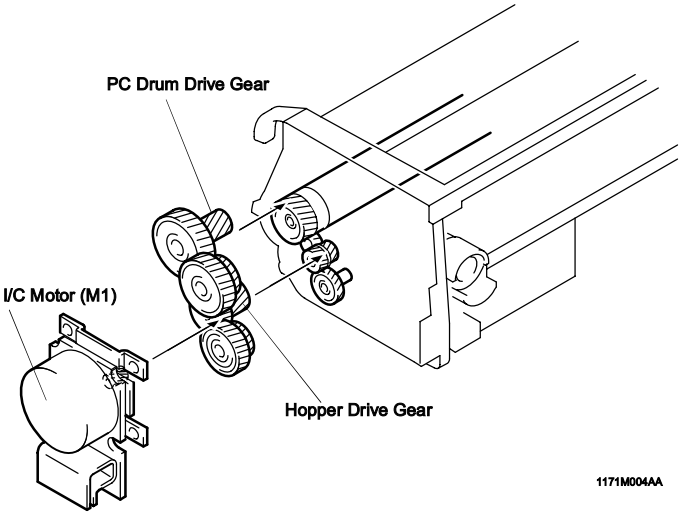
## 7-1. I/C Drive Mechanism

- Drive from the I/C Motor is transmitted via a gear train to the PC Drum and Hopper.




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M1 | PJ16A-3 | L | H |

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## 7-2. Identification and Life of I/C

- When the Start key is pressed or the Side Cover is opened and closed, the copier determines whether the I/C is new or one which has been used previously.
- The copier monitors the I/C life by storing in memory the period of time during which the PC Drum has turned. The data is cleared when a new I/C is installed in the copier.

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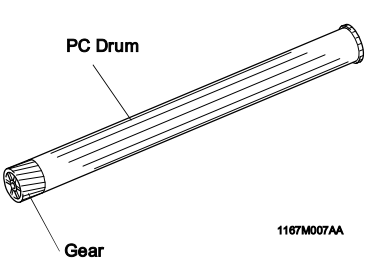
# 8 PC DRUM

- The PC Drum used in this copier is the organic photoconductor (OPC) type. The drum consists of an aluminum base coated with a charge generation layer and a charge transport layer.

---

Handling Precautions
Prolonged exposure to light can cause the photoconductor surface of the drum to suffer light fatigue, resulting in a loss of photosensitivity. If the I/C is removed from the copier, it should be wrapped in a soft, clean, opaque cloth or other protective covering to prevent exposure to light.

---

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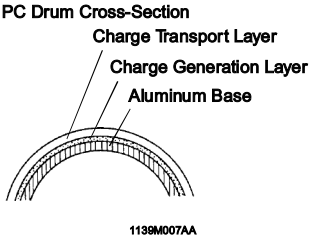
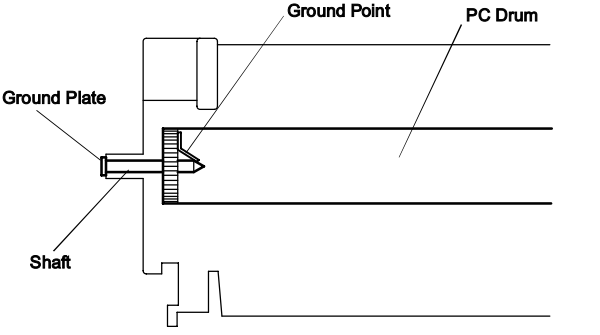



1139M007AA

- Grounding of the PC Drum
  The PC Drum ground point is located inside and at the front end of the I/C as viewed from the front of the copier and in constant contact with the Drum Holding Shaft. When the I/C is installed in the copier, the Drum Holding Shaft contacts the ground point. This provides for assured grounding of the PC Drum through the ground plate in the rear to the frame of the copier.

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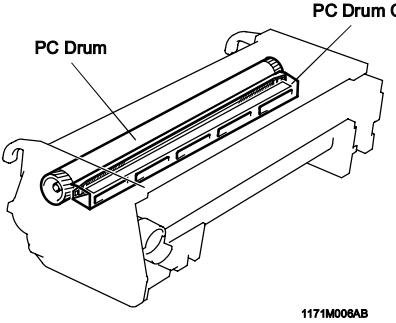
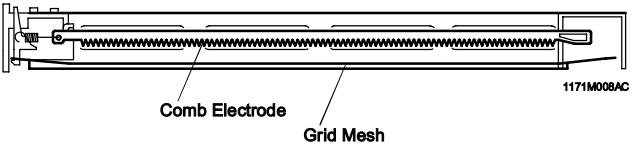
# 9 DRUM CHARGING

- A scorotron charger system generates a negative DC corona discharge onto the PC Drum surface. The grid mesh ensures uniform charging.
- The grid voltage (Vg) applied to the grid mesh is controlled by the constant voltage circuitry within the High Voltage Unit. It is varied through image stabilization control.
- To restrict ozone production, the copier uses a PC Drum Charge Corona with a comb electrode.



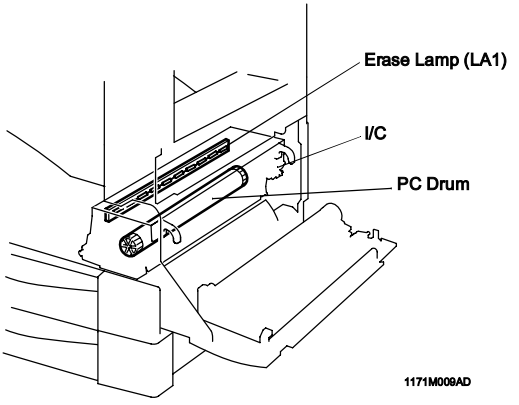



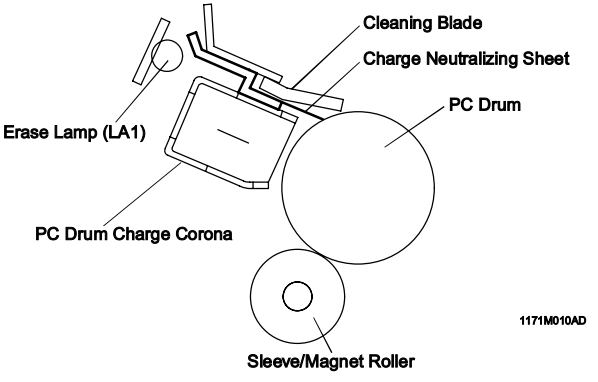

| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| Drum charging output | PJ14A-3A | L | H |

1171SBM1000A

# 10 ERASE LAMP

- Any potential remaining on the surface of the PC Drum is neutralized by both light from the Erase Lamp and a DC negative voltage applied by the Charge Neutralizing Sheet.
- The Charge Neutralizing Sheet applies a negative charge on the surface of the PC Drum which is positively charged by the Image Transfer Roller. A voltage of -820V is applied to the Charge Neutralizing Sheet from the High Voltage Unit. The Erase Lamp then illuminates the surface of the PC Drum to further neutralize it.
- The Erase Lamp consists of ten tungsten lamps.




| Electrical Component | Control Signal | All lamps ON | Standby ON |
|---|---|---|---|
| LA1 | PJ11A-6A | H | L |

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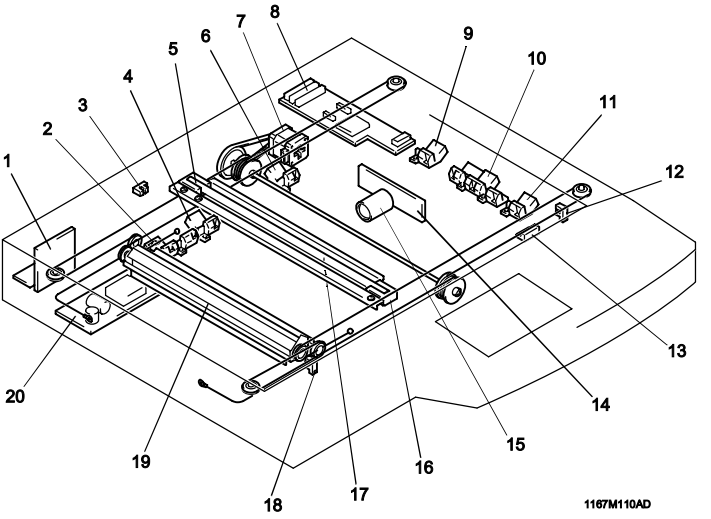
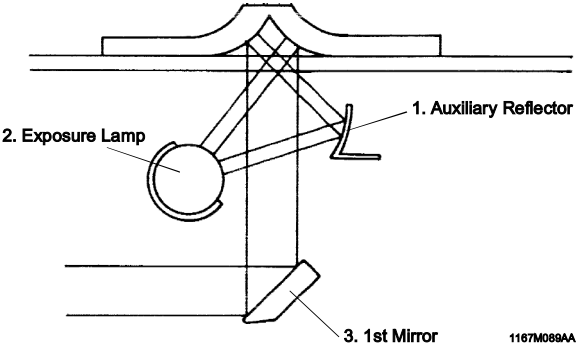
# 11 IR SECTION

- Light reflected from the original passes through three mirrors and a lens to form a reduced image on the CCD Sensor as the Scanner is moved by the Scanner Motor. The CCD sensor converts the light pattern (image data) into an electrical image signal.
- The electrical image signal is then output to the MFB Board.




1. BCR Board (BCR)
2. Original Size Detecting Sensor 5 (UN8)
3. Original Cover Detecting Sensor (PC14)
4. Original Size Detecting Sensor 4 (UN7)
5. Exposure Lamp (LA2)
6. Original Size Detecting Sensor 6 (UN9)
7. Scanner Motor (M5)
8. HGB Board (HGB)
9. Original Size Detecting Sensor 1 (UN4)
10. Original Size Detecting Sensor 2 (UN5)
11. Original Size Detecting Sensor 3 (UN6)
12. Scanner Home Position Sensor 1 (PC12)
13. Size Reset Switch (S5)
14. CCD Board (CCD)
15. Lens
16. Scanner
17. 1st Mirror
18. Scanner Home Position Sensor 2 (PC13)
19. 2nd/3rd Mirrors Carriage
20. Inverter Board (INV)

1171SBM1101A
## 11-1. Exposure Section: Construction and Function

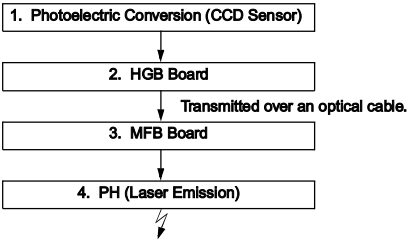



1. Auxiliary Reflector
   When a book or other bound original is copied, the paper in the area near the binding generally fails to come flush against the glass, so that the copy of these areas is generally too dark. The Auxiliary Reflector reduces this problem by reflecting light from the Exposure Lamp onto these areas of the original.
2. Exposure Lamp
   A fluorescent lamp is used to illuminate the original.
3. 1st Mirror
   Directs the reflected light from the original to the 2nd Mirror.

| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| LA2 | CN13BCR-1 | L | H |

1171SBM1102A
## 11-2. Image Processing Flow

- Image processing is made up of the following blocks.




1. Photoelectric Conversion (CCD Sensor)
- Light reflected off the original is received through mirrors and lens by the CCD Sensor which, in turn, outputs the corresponding data to the HGB Board.

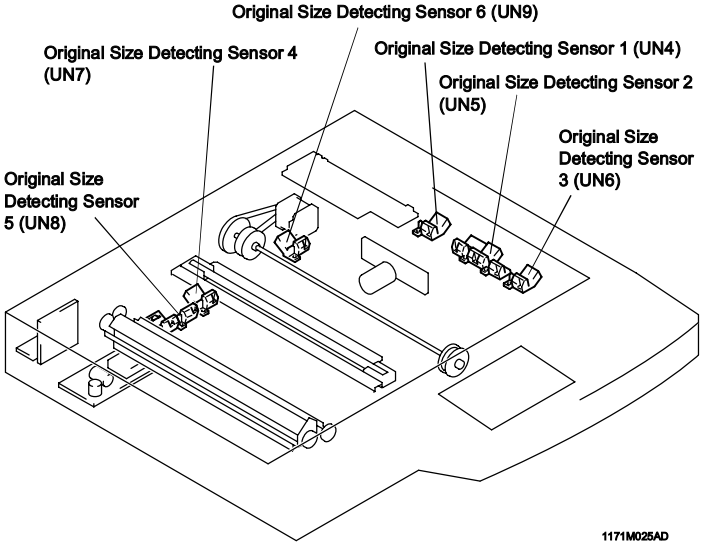
2. HGB Board
- After converting the data received from the CCD to an analog signal, the board converts it to 8-bit image data (A/D conversion). It further makes various corrections and outputs the resultant image data to the MFB Board over an optical cable.

3. MFB Board
- This board compresses the image data received from the HGB Board, stores it, and uncompresses it.
- The image memory has a standard capacity of 16MB and can be expanded up to 64MB (optional).

4. PH
- Emits a laser beam according to the image data provided by the MFB Board to expose the surface of the PC Drum.

1171SBM1103A
## 11-3. Original Size Detection

- When the copier is in Auto Paper or Auto Size, the sensors mounted in the IR receive light reflected off the original to allow the copier to determine the original size.


Original Size Detecting Sensor 6 (UN9)
Original Size Detecting Sensor 4 (UN7)
Original Size Detecting Sensor 1 (UN4)
Original Size Detecting Sensor 2 (UN5)
Original Size Detecting Sensor 3 (UN6)
Original Size Detecting Sensor 5 (UN8)
1171M025AD

| Electrical Component | Control Signal | Blocked | Unblocked |
|---|---|---|---|
| UN4 | CN4BCR-4 | L | H |
| UN5 | CN5BCR-7 | L | H |
| UN6 | CN11HGB-4 | L | H |
| UN7 | CN6BCR-4 | L | H |
| UN8 | CN9HGB-1 | L | H |
| UN9 | CN8BCR-4 | L | H |

<Original Size Identification: Metric Areas>

| Original Size | UN4 | UN5 | | | UN6 | UN7 | UN8 | | UN9 |
|---|---|---|---|---|---|---|---|---|---|
| | S1 | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 |
| 11" × 17" | ○ | ○ | ○ | ○ | | ○ | ○ | ○ | ○ |
| A3L | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| A4L | ○ | ○ | | | | ○ | | | ○ |
| A4C | ○ | ○ | ○ | ○ | ○ | | | | ○ |
| A5L | | | | | | | | | ○ |
| B4L | ○ | ○ | ○ | | | ○ | ○ | ○ | ○ |
| FLS | ○ | ○ | | | | ○ | ○ | | ○ |
| Letter L | ○ | ○ | | | | | | | ○ |
| Letter C | ○ | ○ | ○ | ○ | | | | | ○ |
| Legal | ○ | ○ | | | | ○ | ○ | ○ | ○ |

○: Detected by sensor; L: Lengthwise; C: Crosswise

*NOTE*
*UN4, UN6 and UN8 are options.*

<Original Size Identification: Inch Areas>

| Original Size | UN5 | | | UN6 | UN7 | UN8 | | UN9 |
|---|---|---|---|---|---|---|---|---|
| | S2 | S3 | S4 | S5 | S6 | S7 | S8 | S9 |
| 11" × 17" | ○ | ○ | ○ | | ○ | ○ | ○ | ○ |
| A3L | ○ | ○ | ○ | ○ | ○ | ○ | ○ | ○ |
| A4L | ○ | | | | ○ | | | ○ |
| A4C | ○ | ○ | ○ | ○ | | | | ○ |
| B4L | ○ | ○ | | | ○ | ○ | ○ | ○ |
| 5-1/2" × 8-1/2"L | | | | | | | | ○ |
| FLS | ○ | | | | ○ | ○ | | ○ |
| B5C | ○ | ○ | | | | | | ○ |
| Letter L | ○ | | | | | | | ○ |
| Letter C | ○ | ○ | ○ | | | | | ○ |
| Legal | ○ | | | | ○ | ○ | ○ | ○ |

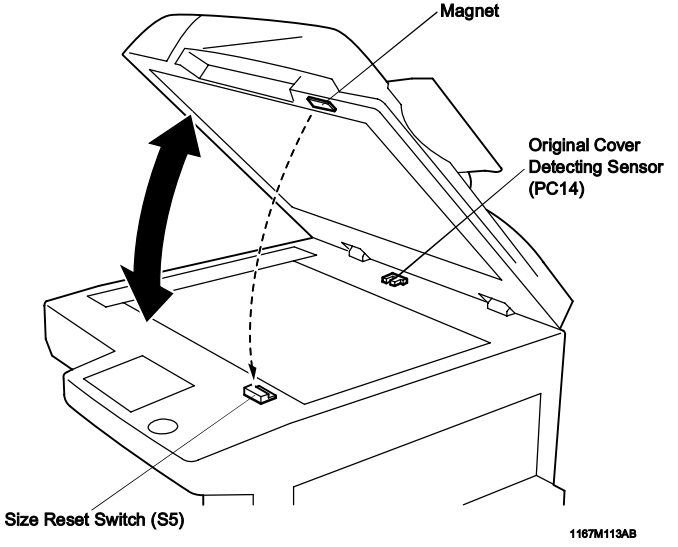
○: Detected by sensor; L: Lengthwise; C: Crosswise

*NOTE*
*UN6, UN8 and UN9 are options.*

1171SBM1104A
## 11-4. Original Size Detection Timing

The copier CPU affirms and resets the readings of the original size at the following timings.

- Takes size readings:
  When the Original Cover Detecting Sensor is deactivated.
- Affirms size readings:
  When the Start key is pressed with the Original Cover Detecting Sensor activated or the Size Reset Switch deactuated.
- Resets size readings:
  When the Size Reset Switch is deactuated.




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| S5 | CN9BCR-2 | L | H |

| Electrical Component | Control Signal | Unblocked | Blocked |
|---|---|---|---|
| PC14 | CN10BCR-2 | L | H |

1171SBM1105A

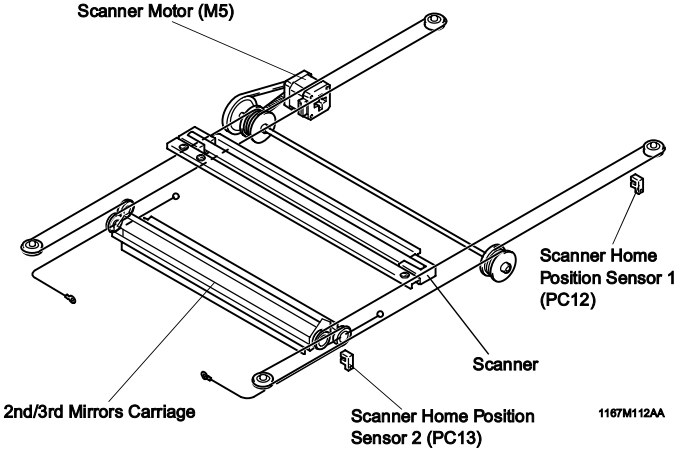
## 11-5. Scanner and 2nd/3rd Mirrors Carriage Moving Mechanism

<Scanner>

- During a scan, the Scanner projects an even amount of light from the Exposure Lamp onto the entire surface of the original. The light is reflected from the original to the 1st Mirror of the scanner and then to the 2nd and 3rd Mirrors.
- The Scanner is driven by the Scanner Motor and front and rear Scanner Drive Cables.
- Scanner speed is determined by the set zoom ratio in reference to the full size mode.
- The Scanner is at home position when Scanner Home Position Sensor 1 is blocked. This position serves as the reference for the scan motion.
- Scanner Home Position Sensor 2 determines the home position of the Scanner when AF-7 is used.

<2nd/3rd Mirrors Carriage>

- The 2nd and 3rd Mirrors are mounted to their holder at right angles to each other. They direct the light reflected off the 1st Mirror through the lens to the CCD.
- The 2nd/3rd Mirrors Carriage is also moved by the Scanner Drive Cables and pulleys driven by the Scanner Motor. It travels at a speed half that of the Scanner, thereby keeping constant the optical path length between the Original Glass and lens.



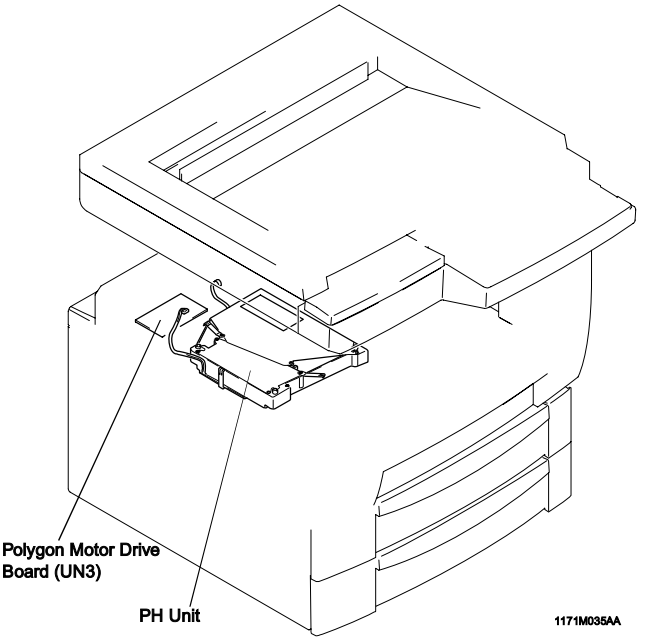

| Electrical Component | Control Signal | Forward Rotation | Backward Rotation |
|---|---|---|---|
| M5 | CN3BCR-1~3 | Pulse output | |

| Electrical Component | Control Signal | Blocked | Unblocked |
|---|---|---|---|
| PC12 | CN11BCR-1 | L | H |
| PC13 | CN12BCR-1 | L | H |

1171SBM1200A

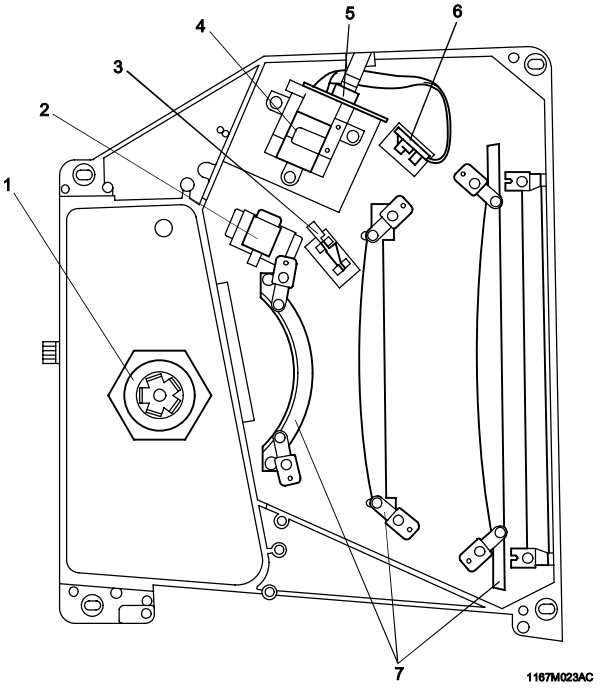
# 12 PH SECTION

- Based on the image data output from the MFB Board, the LD (laser diode) is activated and the corresponding light strikes the surface of the PC Drum.



1171SBM1201A

## 12-1. PH Components



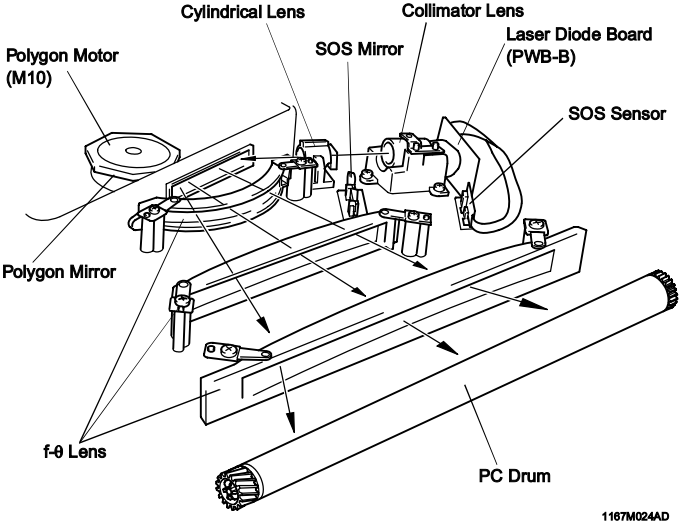

1. Polygon Motor (M10)
2. Cylindrical Lens
3. SOS Mirror
4. Collimator Lens
5. Laser Diode Board (PWB-B)
6. SOS Sensor
7. f-θ Lens

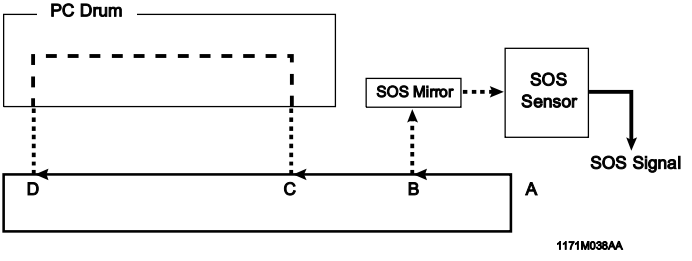
| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M10 | PJ8A-3 | L | H |

1171SBM1202A

## 12-2. Laser Emission Timing (SOS Signal)

- The signal output from the Master Board triggers the firing of the laser. The laser beam travels to the Polygon Mirror, lens, and SOS Mirror to eventually hit the SOS Sensor, which generates an SOS signal.
- The SOS signal determines the laser emission timing for each line in the main scanning direction.



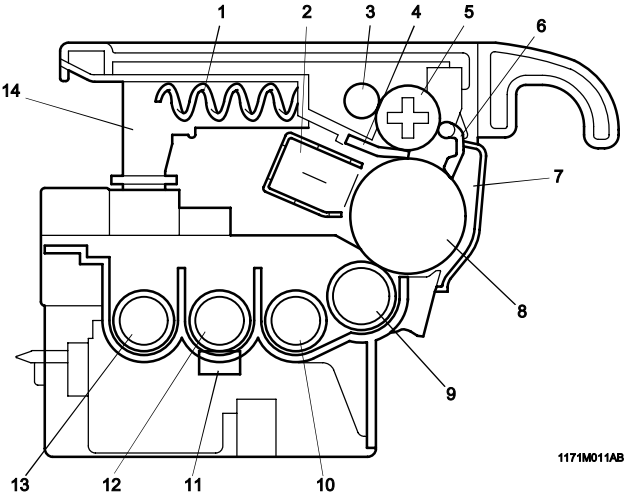




A to B: LD activation
B to C: LD OFF
C to D: Laser beam exposure area according to the image data

1171SBM1300A

# 13 DEVELOPING UNIT

- The Toner Conveying Rollers mix the toner and carrier particles together and carry the toner/carrier mixture up to the Sleeve/Magnet Roller. The magnetic brush formed on the surface of the roller allows the toner to come into contact with the charges on the surface of the PC Drum, thus forming an electrostatic latent image.




1. Spent Toner Recycling Coil
2. PC Drum Charge Corona
3. Spent Toner Feed Roller 2
4. Cleaning Blade
5. Spent Toner Feed Roller 1
6. PC Drum Paper Separator Finger
7. PC Drum Protective Shutter
8. PC Drum
9. Sleeve/Magnet Roller
10. 1st Toner Conveying Roller
11. ATDC Sensor (E1)
12. 2nd Toner Conveying Roller
13. 3rd Toner Conveying Roller
14. Spent Toner Recycling Duct

1171SBM1301A
## 13-1. Sleeve/Magnet Roller

- This copier employs the MT-HG system with a Sleeve/Magnet Roller having the following magnetic characteristics.
- Turning of the sleeve surrounding the Magnet Roller ensures that fresh developer from the Developer Mixing Chamber is always being conveyed to the point of development with respect to the PC Drum.

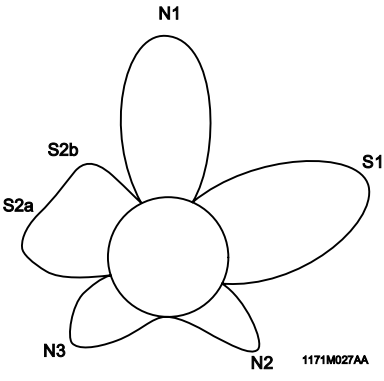
N1 : The point of development with the maximum magnetic flux density which ensures that the carrier is firmly held onto the Sleeve Roller when toner is attracted to the latent image.

S1, N2 : The magnetic flux density between these two poles is made low to ensure that the developer remaining on the surface of the Sleeve Roller is smoothly recycled. They also prevent developer from scattering.

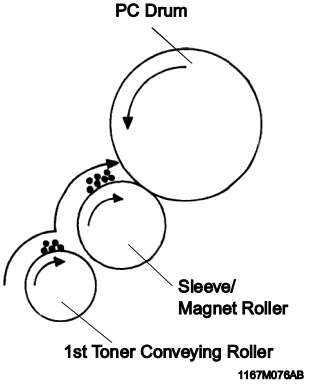
N3 : The developer brush is formed by this pole and its height is moderated before the brush is regulated by the Doctor Blade.

S2a : This pole ensures that the developer is conveyed to the point of development over the wide interval between N3 and N1.

S2b : If developer is compacted and clogs at the Doctor Blade and, as a result, part of the surface of the Sleeve/Magnet Roller is not covered with developer, the nearby developer around this pole with a weak magnetic force goes to those uncovered areas. This helps prevent white lines from occurring on the copy.



1171M027AA

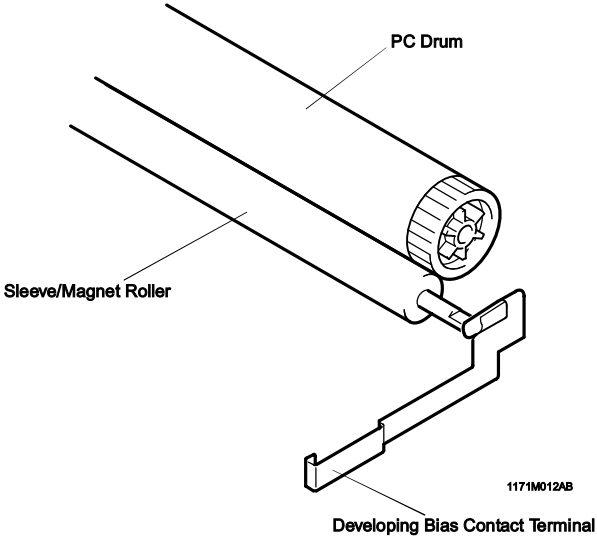


1167M076AB

1171SBM1302A

## 13-2. Developing Bias

- The amount of toner attracted onto the surface of the PC Drum is controlled by varying the developing bias voltage.
- As the PC Drum deteriorates and its photoconductive layer begins to wear, it becomes more sensitive to the increase in the amount of toner. As a countermeasure against this problem, the developing bias voltage is automatically switched according to the PC Drum temperature, thereby stabilizing the image quality level.




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| Vb | PJ14A-1A | L | H |

1171SBM1303A

## 13-3. ATDC Sensor

- The ATDC Sensor automatic adjustment is made when a new I/C is installed in the copier. Toner replenishing control is thereafter controlled as detailed in the following.

1. ATDC Sensor Automatic Adjustment

- The ATDC Sensor is automatically adjusted when a new I/C is loaded in the copier. During this sequence, the copier reads the sensor output value and sets it as the reference. This reference value is stored in memory and used until the I/C reaches its service life.

2. Toner Replenishing Control

- While the I/C Motor is turning, the ATDC Sensor samples T/C and, according to the readings, the copier provides the following controls.

| T/C Ratio (%) | Sampling Data (V) | Control Details |
|---|---|---|
| More than 19 | Less than 1.41 | Defective ATDC Sensor |
| 14 to 19 | 2.32 to 1.41 | Toner replenished for 0 msec. |
| 13 to 14 | 2.50 to 2.32 | Toner replenished for 54 msec. at intervals of approx. 1 sec. |
| 12 to 13 | 2.68 to 2.50 | Toner replenished for 150 msec. at intervals of approx. 1 sec. |
| 10 to 12 | 3.10 to 2.68 | Toner replenished for 378 msec. at intervals of approx. 500 msec. |
| 7 to 10 | 3.92 to 3.10 | Passed onto the T/C recovery mode. |
| Less than 7 | More than 3.92 | Defective ATDC Sensor |

* Toner replenishment represents the operation of the Sub Hopper Toner Replenishing Motor.

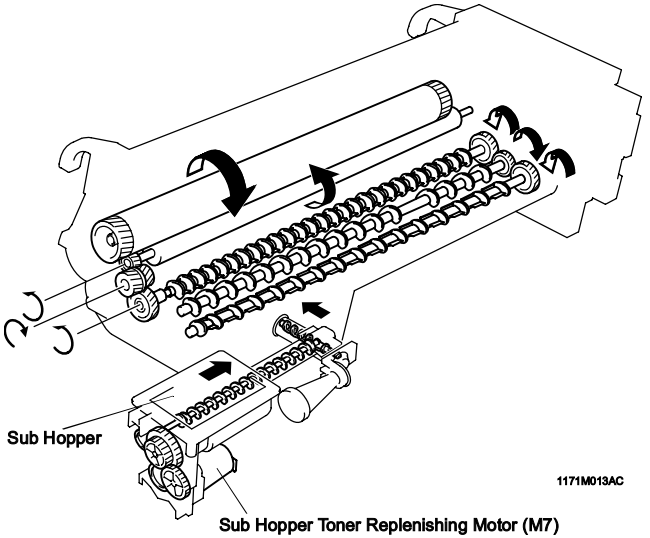
3. Toner Empty Control (T/C Recovery Mode)

- When the control is passed onto the T/C recovery mode, the Sub Hopper Toner Replenishing Motor is energized to replenish the supply of toner into the Developing Unit and, if T/C is recovered to a level of 14% or higher (2.32V or less) within 150 sec., it resets the toner-empty condition.

1171SBM1304A

## 13-4. Sub Hopper Toner Replenishing Mechanism

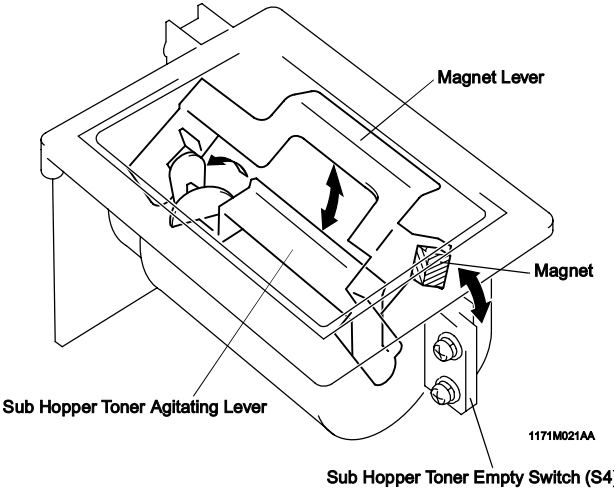
- Toner is replenished from the Sub Hopper to the Developing Unit by turning the Sub Hopper Toner Replenishing Motor for the period of time controlled by the ATDC output voltage (T/C).




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M7 | PJ11A-8A | DC24V | L |

1171SBM1305A
## 13-5. Sub Hopper Toner Empty Detecting Mechanism

- A toner-empty condition in the Sub Hopper is detected by the Magnet Lever that moves up and down as the Sub Hopper Toner Agitating Lever turns and actuates and deactuates the Sub Hopper Toner Empty Switch.
- While the amount of toner in the Sub Hopper is more than the predetermined amount, the Magnet Lever rests on the toner, keeping the Sub Hopper Toner Empty Switch deactuated even when the Sub Hopper Toner Agitating Lever turns. As toner is consumed, the Magnet Lever lowers to eventually actuate the Sub Hopper Toner Empty Switch, at which timing the copier detects a toner-empty condition in the Sub Hopper.

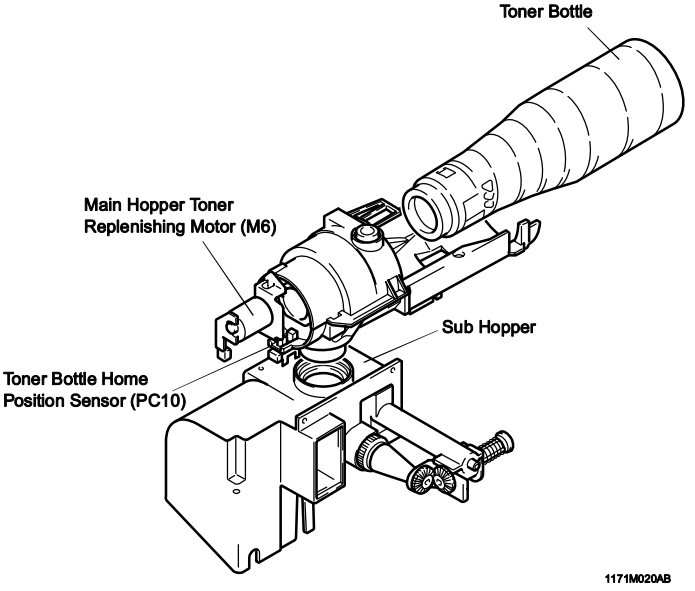



| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| S4 | PJ11A-7B | L | H |

1171SBM1306A

## 13-6. Main Hopper Toner Replenishing Mechanism

- When a toner-empty condition in the Sub Hopper is detected, the Main Hopper Toner Replenishing Motor is energized to turn the Toner Bottle, thereby supplying toner from the Main Hopper to the Sub Hopper.
- The Toner Bottle Home Position Sensor mounted on the coupling ensures that the Toner Supply Port in the Toner Bottle is positioned at the top whenever the bottle is stopped.
- The Toner Bottle Cover Sensor detects whether the Toner Bottle Cover is open. If the cover is open, the copier does not authorize the initiation of a new copy cycle. If the cover is opened during a copy cycle, the copier interrupts the cycle.

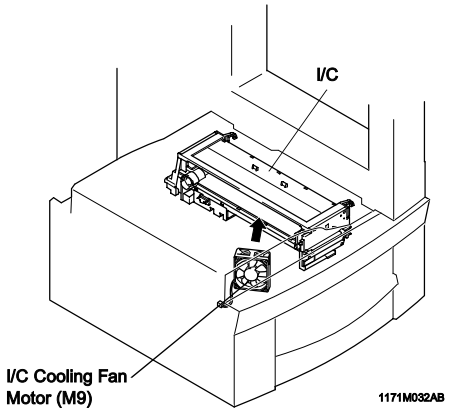



| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M6 | PJ11A-4A | DC24V | L |

| Electrical Component | Control Signal | Unblocked | Blocked |
|---|---|---|---|
| PC10 | PJ11A-2B | L | H |

1171SBM1307A
## 13-7. I/C Cooling Fan Motor

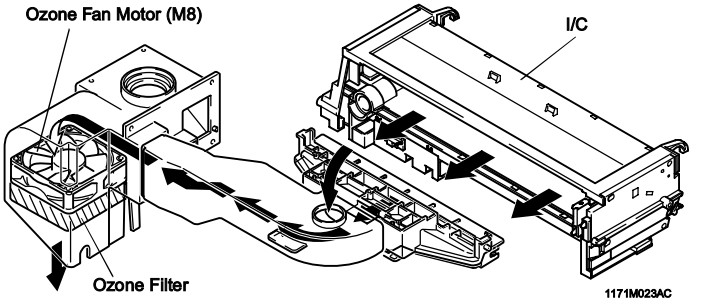
- The I/C Cooling Fan Motor prevents the temperature inside the copier (around the entire I/C) from rising inordinately.




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M9 | PJ18A-10 | DC24V | L |

1171SBM1308A
## 13-8. Ozone Fan Motor

- Ozone produced by the PC Drum Charge Corona is absorbed by the Ozone Filter from the air being drawn out of the copier by the Ozone Fan Motor.




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M8 | PJ11A-1A | DC24V | L |

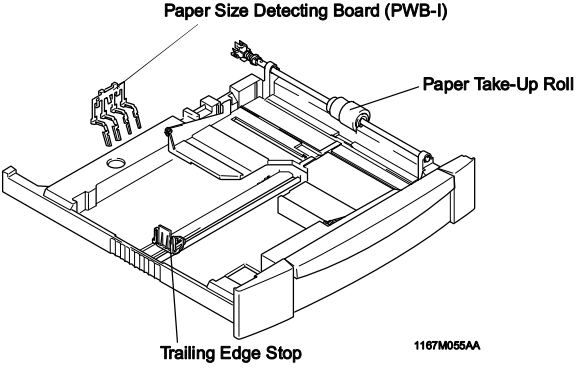
1171SBM1400A

# 14 PAPER TAKE-UP/FEED SECTION

*NOTE*

- For the details of the 2nd Cassette (500-Sheet Cassette), see the relevant option service manual.

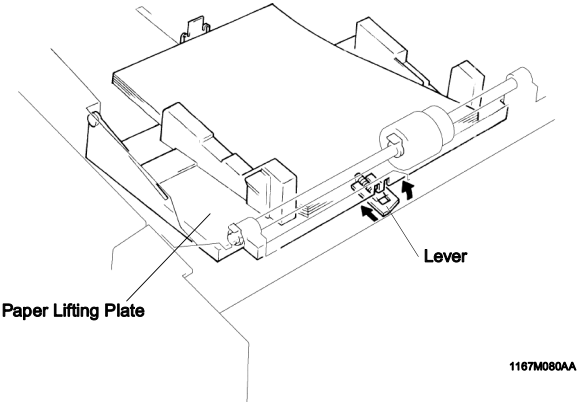
- This copier employs the Multi-Purpose (MP) Cassette whose capacity is about 250 sheets (about 20 sheets for special paper).




1171SBM1401A

## 14-1. MP Cassette Paper Lifting Plate

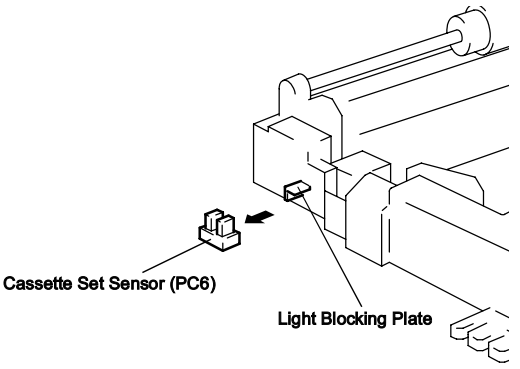
- The Paper Lifting Plate installed in the MP Cassette is spring-loaded to push the paper stack upward. When the cassette is slid into the copier, the lever located on the bottom of the cassette and used to lock down the Paper Lifting Plate is pushed and unlocked, allowing the Paper Lifting Plate to push the paper stack upward.



1171SBM1402A

## 14-2. MP Cassette-in-Position Detection

- When the MP Cassette is slid into the copier, the light blocking plate located in the rear of the cassette blocks the Cassette Set Sensor and the copier determines that the MP Cassette has been slid into position.




1167M052AB

| Electrical Component | Control Signal | Unblocked | Blocked |
|---|---|---|---|
| PC6 | PJ13A-5B | H | L |

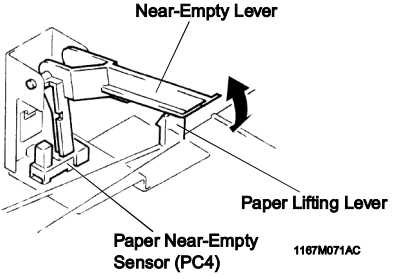
1171SBM1403A

## 14-3. MP Cassette Paper Empty Detection

- Two sensors are used in this copier: the Paper Empty Sensor detects a paper-empty condition, while the Paper Near-Empty Sensor detects a paper near-empty condition.

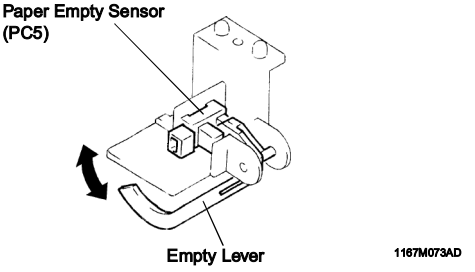
Paper Near-Empty Detection:

- A paper near-empty condition is detected as the paper is consumed and when the Near-Empty Lever lowers to eventually block the sensor (L).
- At this time, the MP Cassette Paper Empty LED starts blinking.
- A paper-empty condition results when about 50 more sheets of paper are used after the near-empty condition has been detected.




Paper Empty Detection:

- A paper-empty condition is detected as the paper is consumed and when the Empty Lever lowers to eventually block the sensor (L).
- At this time, the MP Cassette Paper Empty LED lights up steadily.



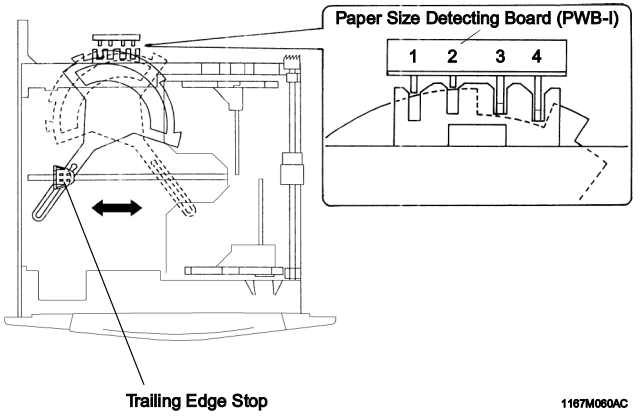

| Electrical Component | Control Signal | Unblocked | Blocked |
|---|---|---|---|
| PC4 | PJ14A-13A | H | L |
| PC5 | PJ13A-2B | H | L |

1171SBM1404A

## 14-4. MP Cassette Paper Size Detection

- The Paper Size Detecting Board detects the length of the paper (FD).
- A lever is connected to the Trailing Edge Stop of the cassette and, as the stop is slid to the size of the paper loaded in the cassette, the lever is moved to turn ON and OFF the size detecting switches mounted on the copier side.
- The control panel settings are necessary for any paper size other than the following.

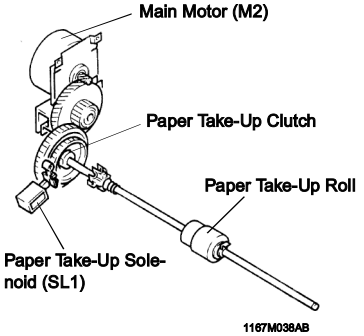
| Paper Size Detecting Switches (PWB-I) | | | | Paper Size |
|---|---|---|---|---|
| 1 | 2 | 3 | 4 | |
| ON | OFF | OFF | OFF | A3L, 11"×17"L |
| OFF | OFF | OFF | OFF | B4L, 8-1/2"×14"L |
| OFF | ON | ON | ON | A4L |
| ON | ON | ON | ON | B5L, 8-1/2"×11"L |
| ON | ON | OFF | OFF | A4C/A5L |
| ON | OFF | OFF | ON | B5C |
| OFF | ON | OFF | OFF | A5C |
| ON | ON | ON | OFF | 8-1/2"×11"C |



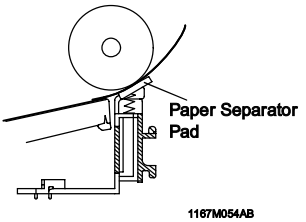

| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| PWB-I (1) | PJ14A-1B | L | H |
| PWB-I (2) | PJ14A-2B | L | H |
| PWB-I (3) | PJ14A-3B | L | H |
| PWB-I (4) | PJ14A-4B | L | H |

1171SBM1405A
## 14-5. Paper Take-Up Mechanism

- Drive from the Main Motor is transmitted to the Paper Take-Up Clutch (spring clutch) and, by energizing the Paper Take-Up Solenoid, the Paper Take-Up Roll is turned.
- The paper separating mechanism employs a Paper Separator Pad.



1167M038AB

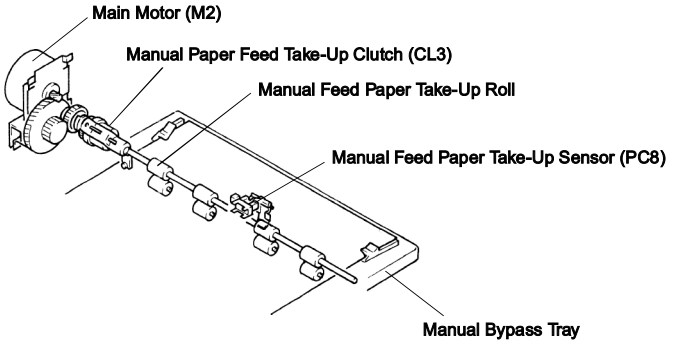


1167M054AB

1171SBM1406A
## 14-6. Manual Bypass Tray

1. Construction of the Manual Bypass Tray

- Drive from the Main Motor is transmitted to the Manual Paper Feed Take-Up Clutch and, by energizing this clutch, the Manual Feed Paper Take-Up Roll is turned.

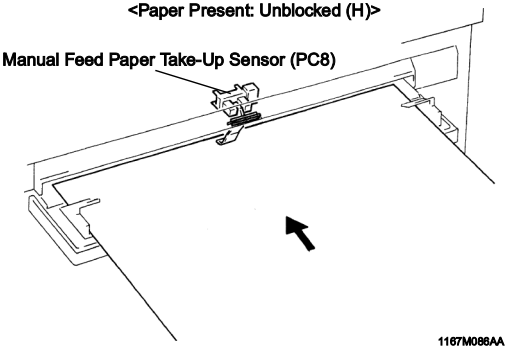

Main Motor (M2)
Manual Paper Feed Take-Up Clutch (CL3)
Manual Feed Paper Take-Up Roll
Manual Feed Paper Take-Up Sensor (PC8)
Manual Bypass Tray
1167M067AC

| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M2 | PJ16A-1 | L | H |
| SL1 | PJ13A-13B | L | H |
| CL3 | PJ4A-9A | L | H |

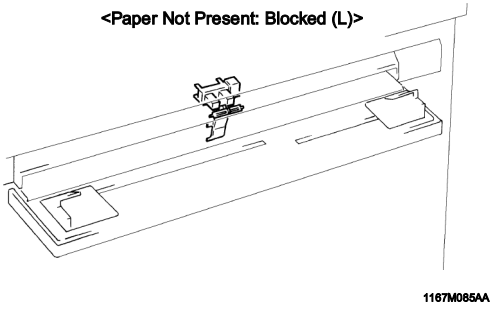
2. Manual Feed Paper Take-Up Detection

- The Manual Feed Paper Take-Up Sensor detects a sheet of paper that is fed via the Manual Bypass Tray.
- The size and type of the paper for manual feed are set on the control panel.

<Paper Present: Unblocked (H)>




<Paper Not Present: Blocked (L)>




| Electrical Component | Control Signal | Unblocked | Blocked |
|---|---|---|---|
| PC8 | PJ4A-7B | H | L |

1171SBM1407A

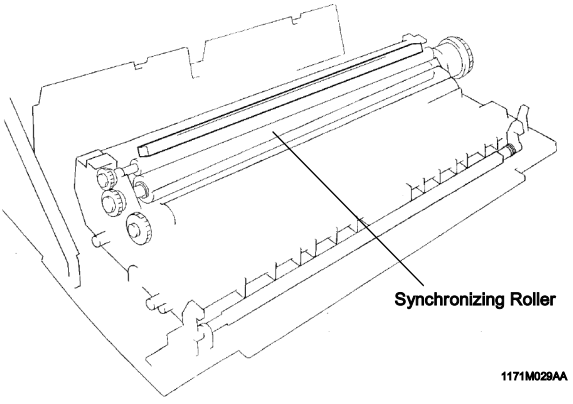
## 14-7. Paper Take-Up Retry Mechanism

- To minimize the occurrence of a paper misfeed due to a slippery Paper Take-Up Roll, the Paper Take-Up Solenoid is energized a second time if a sheet of paper fails to reach the Synchronizing Roller Sensor within a given period of time after the solenoid has been energized first.
- A paper take-up misfeed results if the sheet of paper does not reach the Synchronizing Roller Sensor even after two paper take-up sequences.

1171SBM1500A

# 15 SYNCHRONIZING ROLLERS

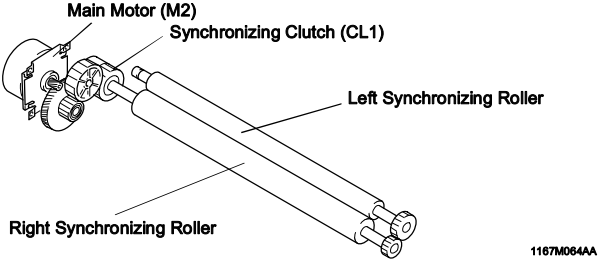
- The Synchronizing Rollers of this copier are located inside the Right Door. They are easily accessible for misfeed clearing by just opening the Right Door.




1171SBM1501A

## 15-1. Synchronizing Roller Drive Mechanism/Control

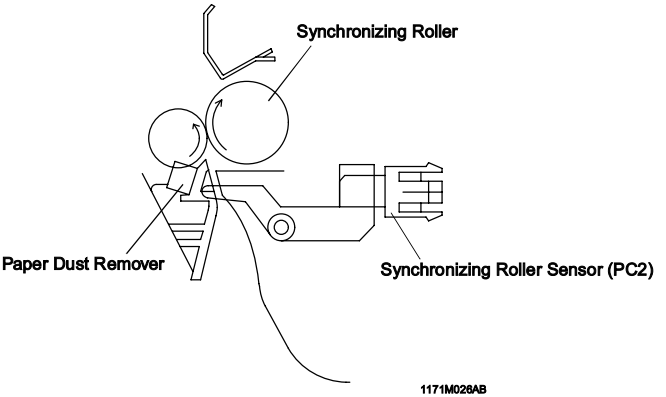
- The Synchronizing Rollers are turned by the drive from the Main Motor transmitted to the Synchronizing Clutch.
- The rollers are started when the Synchronizing Clutch is deenergized.




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M2 | PJ16A-1 | L | H |
| CL1 | PJ13A-2A | L | H |

1171SBM1502A
## 15-2. Paper Dust Remover

- The Paper Dust Remover is installed so that it makes contact with the Left Synchronizing Roller. It is intended for preventing paper dust from sticking to the surface of the PC Drum.
- As the roller turns in contact with the Paper Dust Remover, triboelectric charging occurs, which attracts paper dust from the paper that passes between the two rollers and the dust is, in turn, transferred onto the Paper Dust Remover.



1171SBM1600A

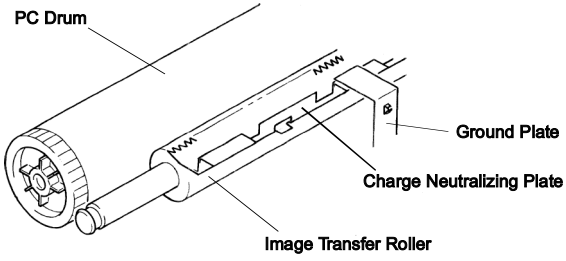
# 16 IMAGE TRANSFER AND PAPER SEPARATION

Image Transfer

- This copier employs an Image Transfer Roller to transfer the image to the paper. The High Voltage Unit applies an image transfer current to this roller. To ensure that image transfer efficiency is stabilized, the image transfer current is automatically varied according to the paper size, paper type, and the B/W ratio of the original.
- To prevent toner from sticking to the Image Transfer Roller, an image transfer voltage of -975V is applied to the roller for cleaning.

Paper Separation

- To neutralize any charge left on the paper, to which the image has been transferred, the High Voltage Unit applies a voltage of -1200V via a ground plate to the Charge Neutralizing Plate.



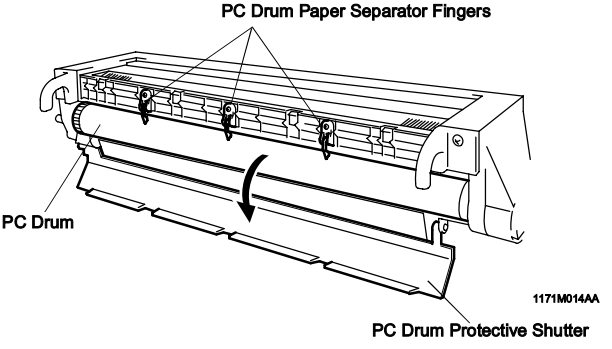

1167M082AA

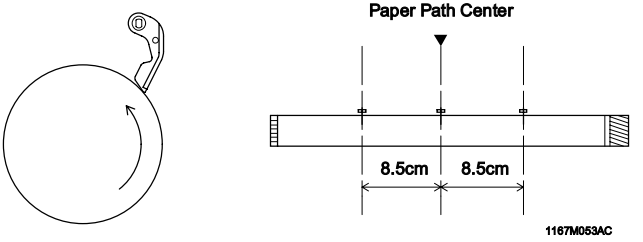
| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| Image transfer output | PJ14A-2A | L | H |

1171SBM1700A

# 17 PC DRUM PAPER SEPARATOR FINGERS

- The three PC Drum Paper Separator Fingers fitted to the I/C mechanically separate paper from the surface of the PC Drum to ensure good and positive paper separation.

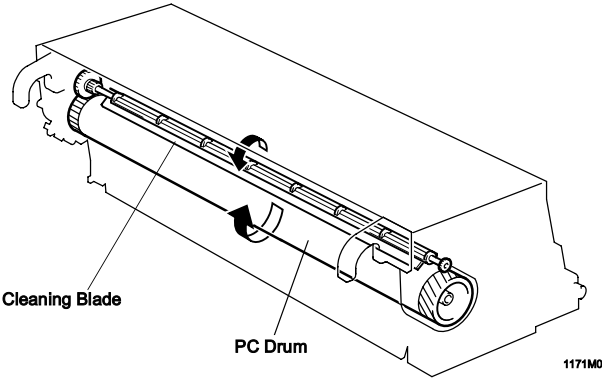


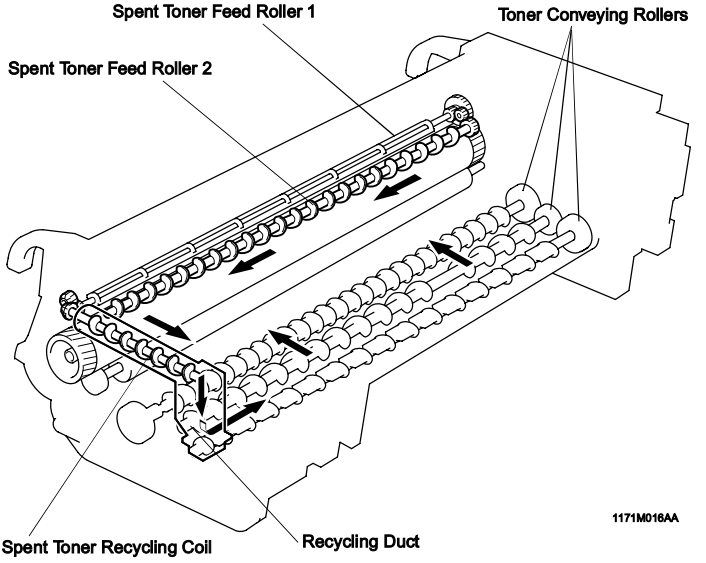
1171SBM1800A

## 18 PC DRUM CLEANING

- This copier employs a spent toner recycling mechanism. The Cleaning Blade which is held pressed against the surface of the PC Drum scrapes residual toner off the surface. The waste toner is conveyed by Spent Toner Feed Roller 1 and 2 to the Spent Toner Recycling Duct and eventually back to the Developer Mixing Chamber.




1171M015AA

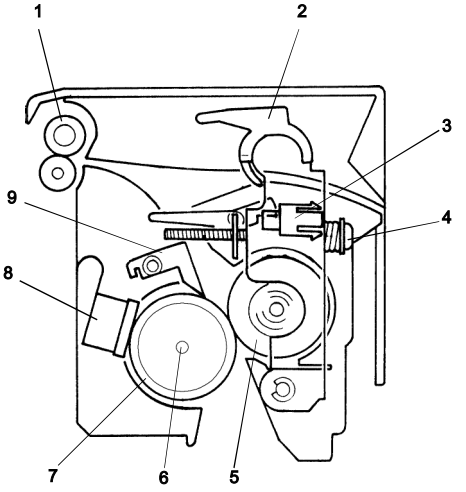



1171M016AA

1171SBM1900A

# 19 FUSING UNIT

- The paper, to which the developed image is yet to be fixed, is fed through heated Left and Right Fusing Rollers. The heat and pressure applied at this time fixes the image permanently to the paper.

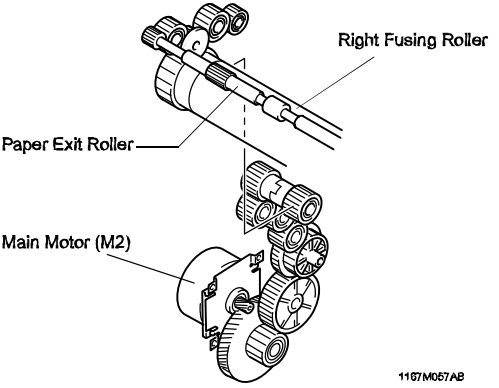



1167M078AB

1. Paper Exit Roller
2. Fusing Misfeed Clearing Lever
3. Paper Exit Sensor (PC3)
4. Pressure Spring
5. Right Fusing Roller
6. Fusing Roller Heater Lamp (H1)
7. Left Fusing Roller
8. Fusing Roller Thermostat (TS1)
9. Fusing Paper Separator Finger

1171SBM1901A
## 19-1. Drive Mechanism

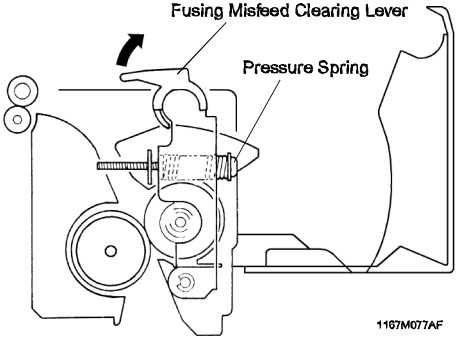
- Drive from the Main Motor is transmitted via a gear train to the Right Fusing Roller.




| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| M2 | PJ16A-1 | L | H |

1171SBM1902A
## 19-2. Fusing Rollers Pressure Mechanism

- To ensure that there is a certain width of area of contact between the Left and Right Fusing Rollers, pressure springs are installed.
- The rollers are held pressed against each other at all times and they are released only when servicing the copier or replacing parts.
- The pressure between the two rollers is approx. 17 kg.
- The rollers can be released by moving the Fusing Misfeed Clearing Lever in the direction of the arrow.

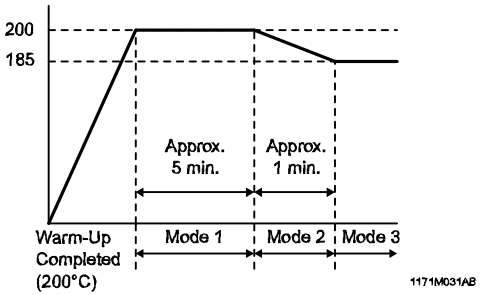


1171SBM1903A

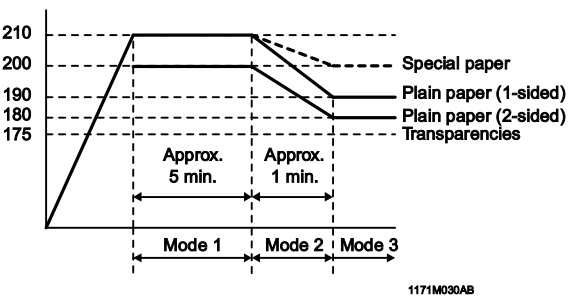
## 19-3. Fusing Temperature Control

- The Fusing Roller Heater Lamp inside the Left Fusing Roller provides the following temperature control.

- Temperature Control During Standby State -




- Temperature Control During a Copy Cycle -




<Temperature Control>

- The Fusing Roller Thermistor detects the surface temperature of the Left Fusing Roller. It provides an analog voltage input to the Master Board allowing the copier to control the fusing temperature.

| Electrical Component | Control Signal | ON | OFF |
|---|---|---|---|
| H1 | PJ16A-8 | L | H |

| Electrical Component | Control Signal | Low Temp. ↔ High Temp. |
|---|---|---|
| TH1 | PJ16A-5 | Analog input |

<Temperature Control by Mode>

- The mode that is initiated following the completion of a warm-up cycle varies as detailed below depending on the machine condition and the Fusing Roller temperature at the restart of temperature control.

| Machine Condition | Fusing Roller Temperature | |
|---|---|---|
| | Less than 100°C | 100°C or higher |
| Power is turned ON. | Mode 1 | Mode 2 |
| Temperature control is interrupted during warm-up. | | Mode 1 |
| Temperature control is interrupted during mode 1. | | |
| Temperature control is interrupted during mode 2. | | Mode 2 |
| Temperature control is interrupted during mode 3. | | |

1171SBM1904A

## 19-4. CPM Control

- As a measure to prevent the temperature on the edges of the Fusing Rollers (over which no part of paper passes) from rising in a multi-copy cycle using small size paper (width of 250 mm or less), the paper feed interval is made greater.

<Control>

- If a sheet of small size paper is taken up and fed in during mode 1, control is switched to mode 2.
- The number of sheets of small size paper that are fed through is counted.

<Timing>

- The counter reaches 30.
- The plain/special paper counter reaches N specified below:
  If the control is in mode 1 or mode 2 when the counter starts counting, N = 30.
  If the control is in mode 3 when the counter starts counting, N = 100.

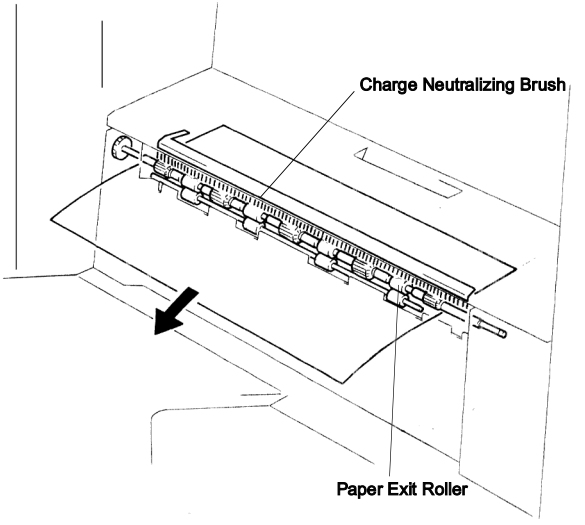
<Resetting>

- If a period of 2 min. or more elapses, during which the counter does not count up after the counter has started counting, the counter is cleared resetting the CPM control.

1171SBM2000A

# 20 PAPER EXIT UNIT

- The Paper Exit Roller feeds the paper, to which the developed image has been fixed, out of the copier. The Charge Neutralizing Brush touches the surface of the sheet of paper being fed out of the Fusing Unit to neutralize any static charge left on it. This effectively prevents two sheets of paper fed out of the copier from sticking to each other due to static charge.

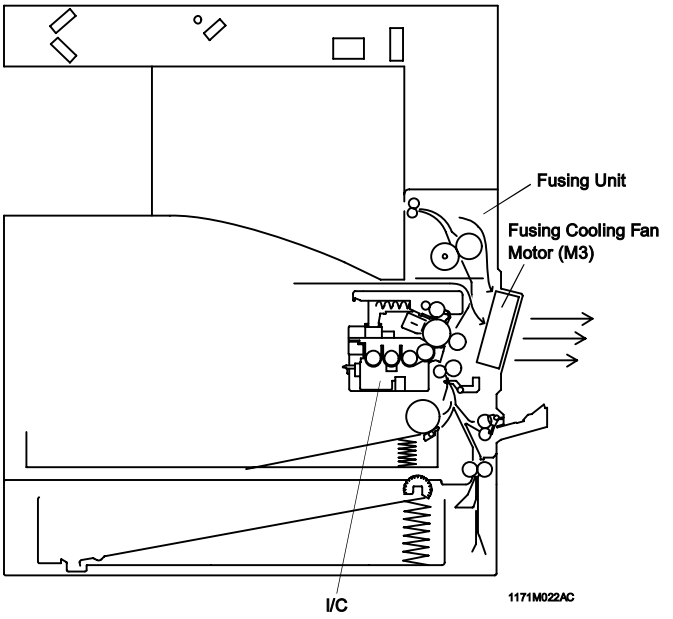



1167M061AC

1171SBM2100A

# 21 FUSING COOLING FAN MOTOR

- The Fusing Cooling Fan Motor located in the Right Door prevents the temperature of the Fusing Unit Cover and the area above the I/C from rising inordinately. The motor also draws the paper after it has been separated from the PC Drum onto the transport guide to ensure that it is stably and smoothly fed into the Fusing Unit.

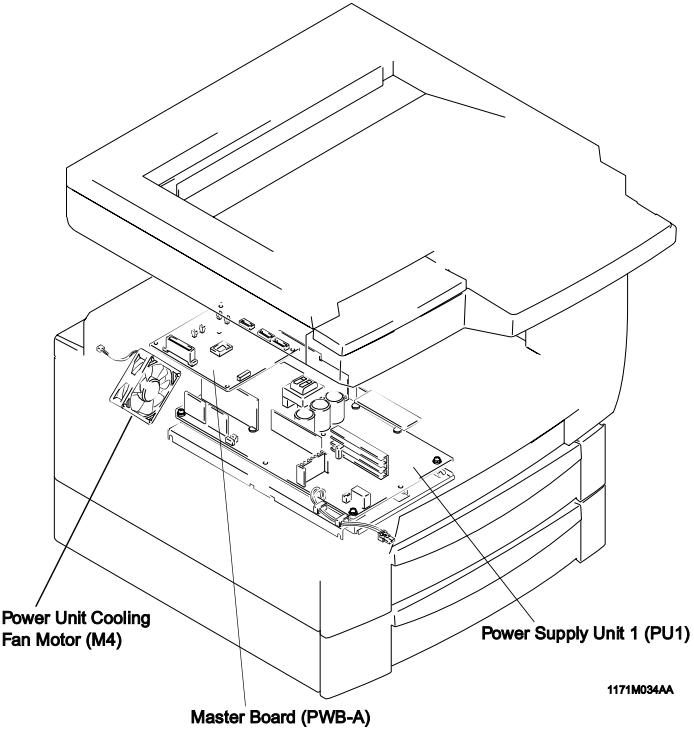



| Electrical Component | Control Signal | During Copy Cycle | In Standby | During Warm-Up |
|---|---|---|---|---|
| | | Full speed | Half speed | Stop |
| M3 | PJ13A-3A | Pulse output | | L |

1171SBM2200A

# 22 POWER UNIT COOLING FAN MOTOR

- The Power Unit Cooling Fan Motor prevents the temperature at the Power Supply Unit and the Polygon Motor in the PH from rising inordinately.




| Electrical Component | Control Signal | While Main Motor is Turning | In Standby |
|---|---|---|---|
| | | Full speed | Half speed |
| M4 | PJ6A-2 | DC24V | DC10V |

# Di350

## SWITCHES ON PWBs, TECH. REP. SETTINGS

MINOLTA

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# 1 PRECAUTIONS FOR HANDLING THE PWBs

## 1-1. Precautions for Transportation and Storage

- Before transporting or storing the PWBs, put them in protective conductive cases or bags so that they are not subjected to high temperature and are not exposed to direct sunlight.
- Protect the PWBs from any external force so that they are not bent or damaged.
- Once the PWB has been removed from its conductive case or bag, never place it directly on an object that is easily charged with static electricity (such as a carpet or plastic bag).
- Do not touch the parts and printed patterns on the PWBs with bare hands.

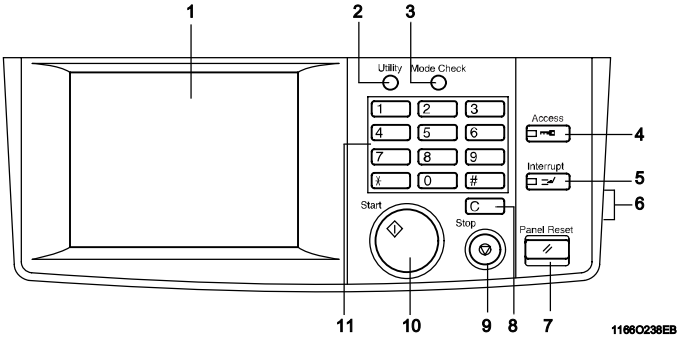
## 1-2. Precautions for Replacement and Inspection

- Whenever replacing the PWB, make sure that the power cord of the copier has been unplugged.
- When the power is on, the connectors should never be plugged in or unplugged.
- Use care not to strap the pins of an IC with a metal tool.
- When touching the PWB, wear a wrist strap and connect its cord to a securely grounded place whenever possible. If you cannot wear a wrist strap, touch the metal part to discharge static electricity before touching the PWB.

# 2 CONTROL PANEL KEYS AND TOUCH PANEL

* For more details, see the Operator's Manual shipped with the copier.

## 2-1. Control Panel Keys




1. Touch Panel
- Shows various screens and messages.

2. Utility Key
- Press to show the User Mode menu.

3. Mode Check Key
- Shows the Mode Check screen on which the user can check the current copying settings.

4. Access Mode Key
- Used to enter the access number. After the access number has been entered, pressing this key will allow the user to make copies.

5. Interrupt Key
- Sets the copier into, or lets it leave, the Interrupt mode.

6. Display Contrast Knob
- Turn to vary the brightness of the Touch Panel.

7. Panel Reset Key
- Clears all settings made on the control panel, setting the copier back into the initial mode.
- Cancels currently reserved jobs.
* It does not clear the zoom ratios and job settings stored in memory and Interrupt mode.

8. Clear Key
- Clears the number-of-copies setting, zoom ratio, and counter count.
- Cancels the image data read.

9. Stop Key
- Press to stop a scanning cycle.
- Press to stop a print cycle.

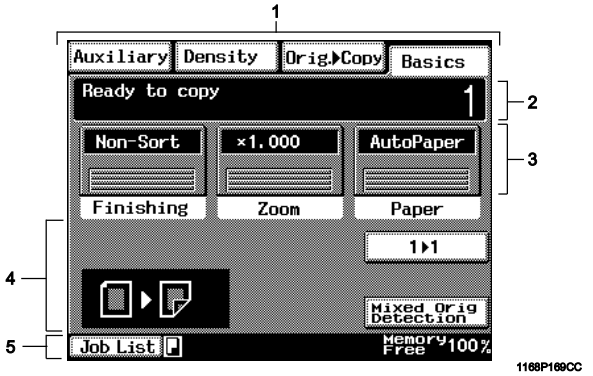
10. Start Key
- Press to start the document scanning sequence.
- Press to start a print cycle.

11. 10-key Pad
- Numeric key pad used for entering the number of copies to be made, zoom ratio, access number, and the Tech. Rep. mode settings.

## 2-2. Explanation of the Touch Panel

### (1) Basic Screen

- The Basic screen is the initial screen that appears when the copier panel is reset or auto reset is activated.




1. Supplementary Function Key
- Selects the corresponding menu screen, either Auxiliary, Density, Orig. ▶ Copy, or Basics.

2. Message Display
- Shows the current copier status, operating instructions, caution/warning messages, and other data including the number of copies selected.

3. Basic Function Keys
- Allows the user to select the finishing, zoom ratio, and copy paper.

4. Function Display
- Shows graphic representations of the settings currently made for Orig. ▶ Copy and Finishing.

5. Status Display
- Shows what is being done with the current job and other data.

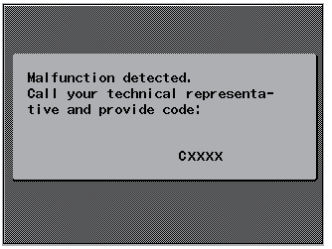
### (2) Warning Screens

- The warning screen may be a malfunction display, error display, warning display, or a caution display.

<Malfunction Display>

- A malfunction display is given when trouble occurs which cannot be corrected by the user.

Example: Malfunctions that can be identified with a specific code.

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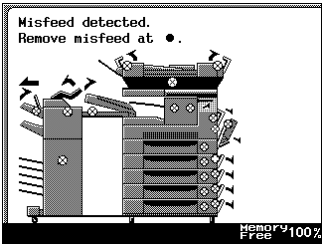
<Error Display>

- An error display is given when trouble occurs which can be corrected by the user.

Example: Paper misfeed, toner empty, door open.

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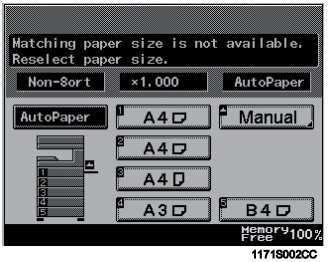
<Warning Display>

- A warning display is given when any further copier operation will not be possible, or only a defective copy will be produced, because of erroneous or illegal panel settings or other cause.

Example: Unmatched paper size in Auto Paper.

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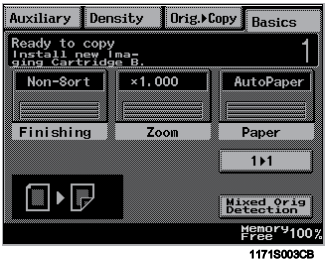
<Caution Display>

- A caution display is given when, though further copier operation will be possible, it could result in a malfunction.

Example: Install new Imaging Cartridge.

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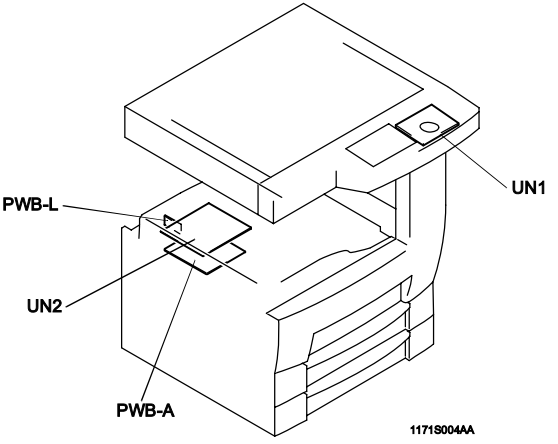
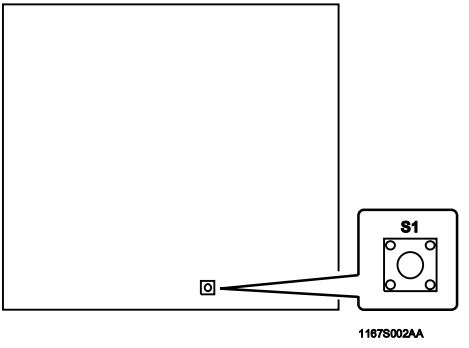
# 3 FUNCTION OF SWITCHES AND OTHER PARTS ON PWBs

## 3-1. PWB Location

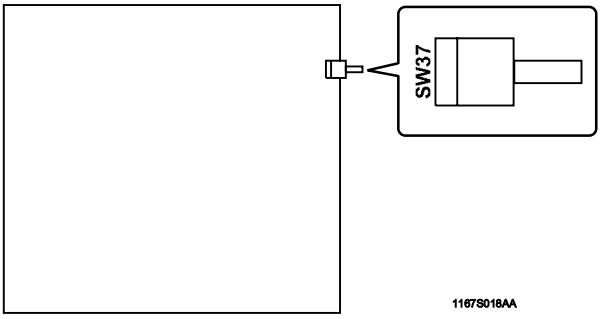



## 3-2. PWB-A (Master Board)



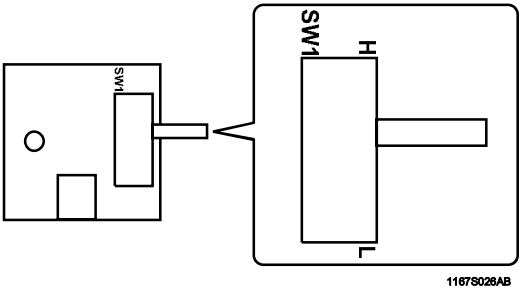

| Symbol | Name | Description |
|---|---|---|
| S1 | Test Print Switch | Used to run a test print cycle. |

## 3-3. UN1 (Control Panel)



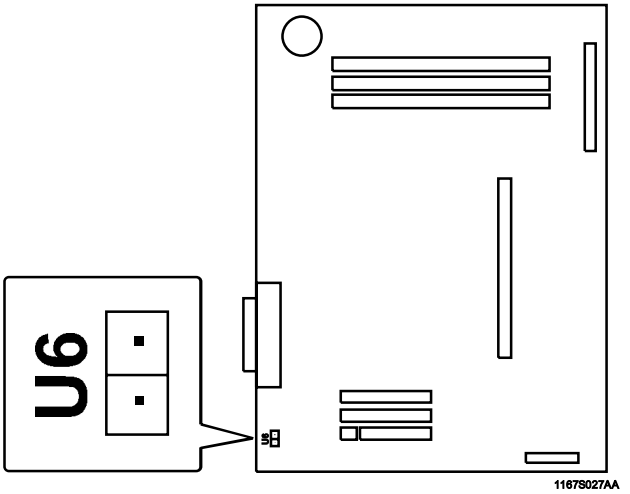

| Symbol | Name | Description |
|---|---|---|
| SW37 | Warm Restart Switch | • Used to enter the initial mode.<br>• Used to restart the copier after a breakdown. |

## 3-4. PWB-L (PPM Switching Board)




| Symbol | Name | Description |
|---|---|---|
| S1 | Low-Speed Mode Selecting Switch | Used to make longer the paper-to-paper intervals as a means of preventing the problem in which sheets of paper are fed out untidily when large size paper left to stand under high humidity condition is being used.<br>✱ Keep this switch in the H position, as it is only for special users. |

## 3-5. UN2 (MFB Board)




| Symbol | Name | Description |
|---|---|---|
| U6 | Forced Memory Clear | Used when it is not possible to clear RAM by warm restart. |

* Be careful about using these pins, as closing these pins clears all data including counter data.

<Clearing Procedure>

1. Turn OFF the Power Switch.
2. Remove the Upper Cover and MFB Box Cover.
3. Close U6 and, in that condition, turn ON the Power Switch.

---

*NOTE*
*Use care not to close any other circuit.*

---

4. When the initial screen appears, turn the Power Switch OFF.
5. Open U6.

---

*NOTE*
*When Forced RAM Clear has been performed, make these adjustments and settings once again in this order:*
*1. "Marketing Area" of "Initial mode"*
*2. "Memory Clear" of "Initial mode"*
*3. Other adjustments and settings as necessary*

---

<Data/Conditions Cleared by Reset Switches/Pins>

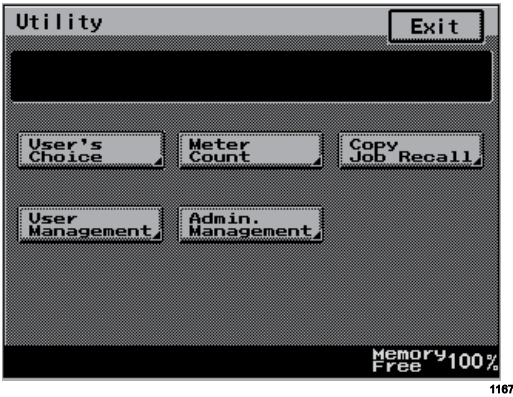
| Switches/Pins / Data/Conditions Cleared | Power Switch OFF/ON | Side Cover open/ close | Initial Mode | | | Forced RAM Clear |
|---|---|---|---|---|---|---|
| | | | Memory Clear | Total Clear | Trouble Reset | |
| Misfeed display | ○ | ○ | ○ | — | ○ | ○ |
| Malfunction display (other than Fusing) | ○ | ○ | ○ | — | — | ○ |
| Malfunction display (all including Fusing) | — | — | ○ | — | ○ | ○ |
| Erratic operation/ display | — | — | ○ | — | ○ | ○ |
| User's Choice | — | — | ○ | — | — | ○ |
| Tech. Rep. Mode | — | — | ○ | — | — | ○ |
| Counter | — | — | — | ○ | — | ○ |
| RD Mode | — | — | — | ○ | — | ○ |
| Security Mode | — | — | ○ | — | — | ○ |
| Adjust Mode | — | — | — | — | — | ○ |

○: Cleared (initialized) —: Not cleared

# 4 USER'S CHOICE MODE

- The User's Choice mode is used to make various settings according to the user's needs.

## 4-1. User's Choice Selection Screen

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## 4-2. User's Choice Function Setting Procedure

<Setting Procedure>

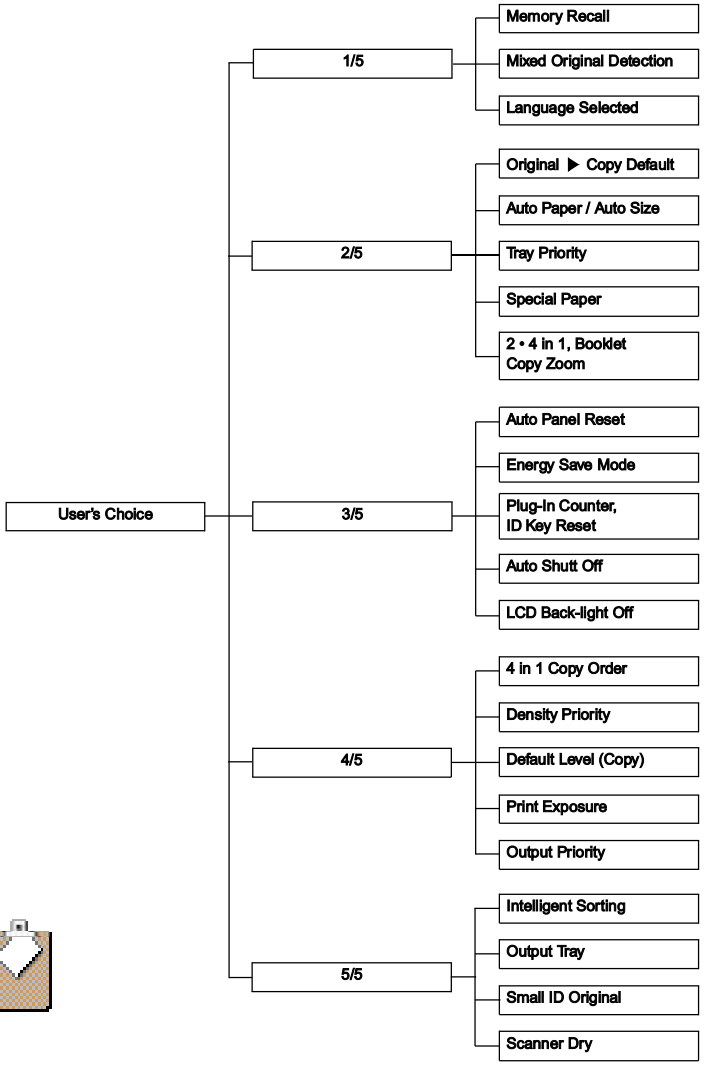
1. Press the Utility key on the control panel and then touch the "User's Choice" key.
2. Select the page number key that contains the desired function from among 1/5 through 5/5 shown at the bottom of the Touch Panel.
3. Select the function to be set and make settings as required.
4. After the settings are complete, touch the "Enter" key to validate the settings.

✱ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the screen to go back to the Basic screen.

## 4-3. User's Choice Function Tree



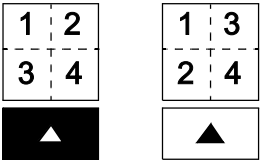
## 4-4. Settings in the User's Choice Mode

1/5

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Memory Recall</td><td>Select whether to enable ("ON") or disable ("OFF") the function that retains the image data even after the last copy paper has been fed out, allowing the user to recall the same image data.<br><table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Mixed Original Detection</td><td>Select whether to let the system select by default ("ON") the Mixed Original Detection mode or not ("OFF") when power is turned ON or the Panel Reset key pressed.<br><table><tr><td>ON</td><td>OFF</td></tr></table></td></tr>
<tr><td>Language Selected</td><td>Select the language of the Touch Panel messages.<br><table><tr><td><Metric Areas></td><td><Inch Areas></td></tr><tr><td><table><tr><td>ENGLISH</td><td>GERMAN</td><td>FRENCH</td></tr><tr><td>DUTCH</td><td>ITALIAN</td><td>SPANISH</td></tr><tr><td>PORTUGUESE</td><td>DANISH</td><td>NORWEGIAN</td></tr><tr><td>SWEDISH</td><td>FINISH</td><td>JAPANESE</td></tr></table></td><td><table><tr><td>ENGLISH</td><td>FRENCH</td><td>SPANISH</td></tr><tr><td>JAPANESE</td></tr></table></td></tr></table></td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Original ▶ Copy Default</td><td>Select the type of Original ▶ Copy setting selected automatically when the copier is turned ON or Panel Reset key pressed. If "Duplex only" is selected for "Simplex/Duplex" of the "Tech. Rep. Choice" function, 1 ▶ 1 is not displayed.<br><1-Sided ▶ 2-Sided><br><table><tr><td>1-Sided ▶<br>2-Sided</td><td>2-Sided ▶<br>2-Sided</td><td>1-Sided ▶<br>1-Sided</td></tr></table><br><1-Sided ▶ 2-Sided><br><table><tr><td>1-Sided ▶<br>2-Sided</td><td>2-Sided ▶<br>2-Sided</td></tr></table></td></tr>
<tr><td>Auto Paper/ Auto Size</td><td>Specify the default mode selected automatically when power is turned ON or the Panel Reset key pressed.<br><table><tr><td>Auto Paper</td><td>Auto Size</td><td>Manual</td></tr></table></td></tr>
<tr><td>Tray Priority</td><td>Specify the paper source selected automatically.<br><table><tr><td>1st Drawer</td></tr><tr><td>2nd Drawer</td></tr><tr><td>3rd Drawer</td></tr><tr><td>4th Drawer</td></tr><tr><td>5th Drawer</td></tr><tr><td>LCT</td></tr></table>✱ Manual Bypass Tray is not selectable.</td></tr>
<tr><td>Special Paper</td><td>Set up a drawer for special paper loading.<br><table><tr><td>Normal</td><td>Not for 2-Sided</td></tr><tr><td>Recycled</td><td>Special</td></tr></table></td></tr>
<tr><td>2 • 4 in 1, Booklet Copy Zoom</td><td>Select whether to enable ("ON") or disable ("OFF") recalling a default zoom ratio for 2in1, 4in1, or Booklet Creation.<br><table><tr><td>ON</td><td>OFF</td></tr></table>The default zoom ratios are as follows when "ON" has been selected.<br>< Metric Areas ><br><table><tr><td>× 0.500 4in1</td></tr><tr><td>× 0.707 2in1/Booklet</td></tr><tr><td>× 1.414 Separation</td></tr></table>< Inch Areas ><br><table><tr><td>× 0.500 4in1</td></tr><tr><td>× 0.647 2in1/Booklet</td></tr><tr><td>× 1.545 Separation</td></tr></table></td></tr>
</table>

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Auto Panel Reset</td><td>Specify the default exposure mode selected automatically when power is turned ON or the Panel Reset key pressed.
<table>
<tr><td>30 seconds</td><td>1 min</td><td>2 min</td></tr>
<tr><td>3 min</td><td>5 min</td><td>No Reset</td></tr>
</table></td></tr>
<tr><td>Energy Save Mode</td><td>Set the time it takes the copier to enter the Energy Saver mode after a copy cycle has been completed or the last key operated. Use the 10-key Pad to set the time (15 to 240 min.).
<table>
<tr><td>(15 to 240) (15 min)</td></tr>
</table></td></tr>
<tr><td>Plug-In Counter, ID key Reset</td><td>Select whether to reset (“ON”) the panel or not (“OFF”) automatically when the Access Mode key is pressed or the Key Counter is unplugged.
<table>
<tr><td>ON</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>Auto Shut Off</td><td>Select whether to turn ON or OFF the Auto Shut Off function that shuts down the copier a given period of time after a copy cycle has been completed or the last key operated. Selecting “ON” means setting the time it takes the Auto Shut Off function to be activated, that can range from 15 min. to 240 min.
<table>
<tr><td>No Reset</td><td>(15 to 240) (60 min)</td></tr>
</table>
* The option of “No Reset” becomes available on the screen if “Yes” is selected for “Disable Sleep” of Utility - Admin. Management - Administrator Set.</td></tr>
<tr><td>LCD Back-light Off</td><td>Set the time it takes the LCD backlight to turn OFF after a copy cycle has been completed or the last key has been operated.
<table>
<tr><td>(1 to 240) (1 min)</td></tr>
</table></td></tr>
</table>

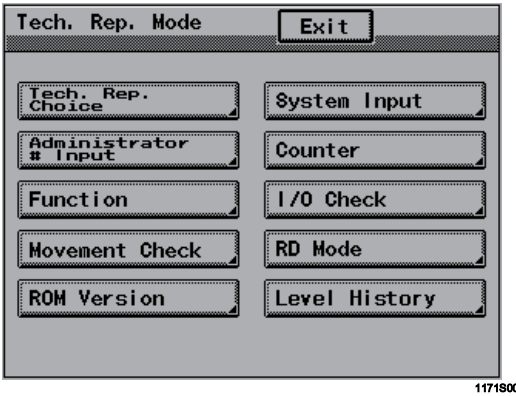
| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| 4 in 1 Copy Order | Specify the default copying order in the 4in1 mode.<br>  |
| Density Priority | Specify the default exposure mode selected automatically when power is turned ON or the panel Reset key pressed.<br><Density><br>**Auto** \| Manual<br>* "Photo" of "Original Image Type" cannot be selected when "Auto" is selected.<br><Original Image Type><br>**Text** \| Photo \| Text/Photo |
| Default Level (Copy) | Auto: Select the default exposure level in the Auto Exposure mode.<br>Manual: Set the default exposure level in the Manual Exposure mode.<br><Auto><br>Lighter \| **Normal** \| Darker<br><Manual><br> <br>Lighter ... Darker<br>* EXP. 1 (Lighter) to EXP. 9 (Darker) |
| Print Exposure | Set the image density level for printing.<br>-2 \| -1 \| **0** \| 1 \| 2 |
| Output Priority | Select the default finishing type when the copier is equipped with a Sorter or Staple Sorter.<br>**Non-Sort** / Sort / Group<br>+ Staple<br>* Staple can be combined with either Sort or Group.<br>+ Hole Punch<br>* Hole Punch can be combined with any one of the functions. |

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Intelligent Sorting</td><td>When the system is equipped with a finishing option and the ADF is being used, select whether to turn “ON” or “OFF” the function that automatically switches between Sort and Non-Sort according to the number of originals loaded in the ADF.
<table>
<tr><td>ON</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>Output Tray</td><td>Select the output tray for each application when the system is equipped with a Job Tray or Finisher.<br><Printer><br>• Job Tray
<table>
<tr><td>1</td><td>2</td></tr>
</table>
• Finisher
<table>
<tr><td>1</td><td>2</td></tr>
</table>
<Copier>
<table>
<tr><td>1</td><td>2</td></tr>
</table>
✱ 1: 1st tray; 2: 2nd tray<br>✱ When the system is equipped with a Finisher, the option of “Copier” and the tray designation keys “1” and “2” are not displayed.</td></tr>
<tr><td>Small ID Original</td><td>Select whether to enable (“ON”) a copy cycle or not (“OFF”) when it is initiated with no original placed on the Original Glass or with an original of a small size that is not detectable by the system (smaller than A5) placed on the Original Glass.
<table>
<tr><td>ON</td><td>OFF</td></tr>
<tr><td>The copy cycle is run using the paper loaded in the default paper source.</td><td>A warning message is given and the copier inhibits the start of this copy cycle.</td></tr>
</table></td></tr>
<tr><td>Scanner Dry</td><td>Set the time-of-day to run a Scanner drying cycle.
<table>
<tr><td>Hours</td><td>Minutes</td></tr>
<tr><td>00 ~ 23</td><td>00 ~ 59</td></tr>
</table>
✱ When entering a value for Hours and Minutes and if it is a one-digit number, first enter a “0.”</td></tr>
</table>

# 5 TECH. REP. MODE

- This mode is used by the Tech. Rep. to set, check, adjust, and/or program various service functions.

## 5-1. Tech. Rep. Mode Menu Screen

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## 5-2. Tech. Rep. Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by the following method:
- With the "Meter Count" screen opened from the Utility menu screen, press the following keys in this order:

Stop Key → 0 → 0 → Stop Key → 0 → 1

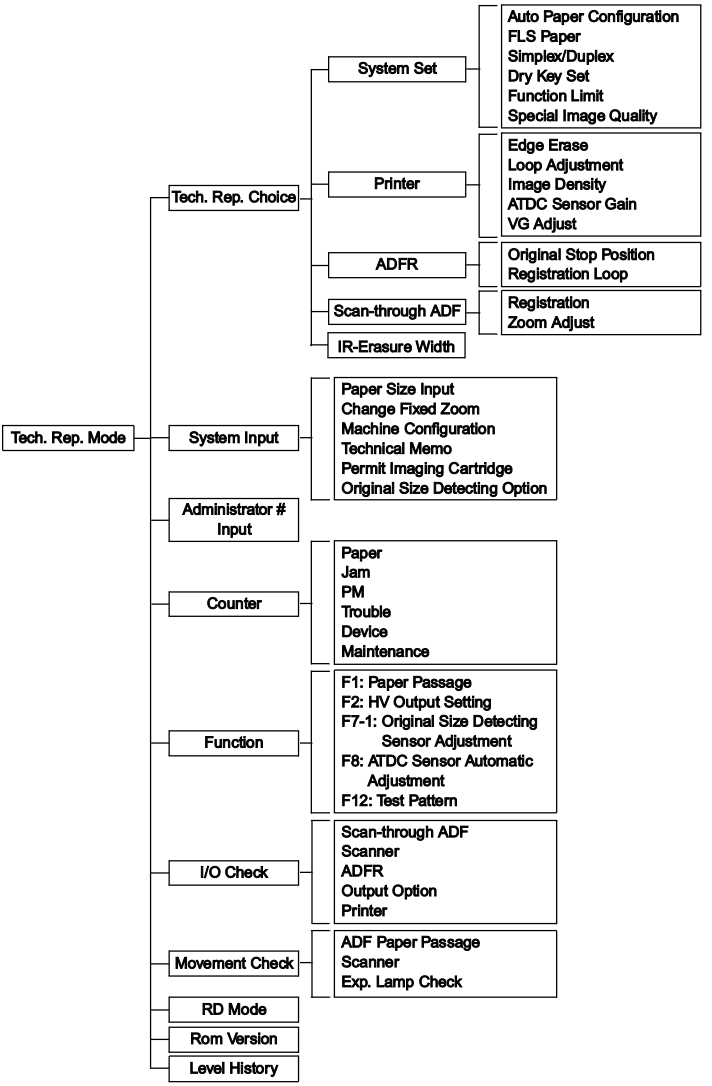
2. Select the particular Tech. Rep. mode function to be set.
3. Make the necessary settings according to the function selected.

✱ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the screen to go back to the Basic screen.

## 5-3. Tech. Rep. Mode Setting Tree



## 5-4. Settings in the Tech. Rep. Mode

### (1) Tech. Rep. Choice

- This function allows the Tech. Rep. to make the various settings and adjustments.

<Function>
1. System Set
2. Printer
3. ADFR
4. Scan-through ADF

<Setting Procedure>
1. Touch [Tech. Rep. Choice] to open a screen to Tech. Rep. Choice.
2. Touch the desired major category key.
3. Touch the desired sub-category key.

Tech. Rep. Mode ▶ Tech. Rep. Choice

<System Set>

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Auto Paper Configuration</td><td><Metric Areas><br>Select either “Inch/Metric” or “Metric” for rounding off the original size detected.
<table>
<tr><td>Inch / Metric</td><td>The measurement is rounded to the nearest standard inch or metric size.</td></tr>
<tr><td>Metric</td><td>The measurement is rounded to the nearest standard metric size.</td></tr>
</table>
<Inch Areas><br>Select either “Inch/Metric” or “Inch” for rounding off the original size detected.
<table>
<tr><td>Inch / Metric</td><td>The measurement is rounded to the nearest standard inch or metric size.</td></tr>
<tr><td>Inch</td><td>The measurement is rounded to the nearest standard inch size.</td></tr>
</table></td></tr>
<tr><td>FLS Paper</td><td>Set the size for FLS.
<table>
<tr><td>F: 330 mm<br>C: 203 mm</td><td>F: 330mm<br>C: 210mm</td><td>F: 330 mm<br>C: 216 mm</td><td>F: 330 mm<br>C: 220 mm</td></tr>
</table></td></tr>
<tr><td>Simplex/Duplex</td><td>Select whether or not to enable the setting of 1-Sided ▶ 1-Sided under Original ▶ Copy Default available from User’s Choice.<br>* If “Simplex & Duplex” is selected, 1-Sided ▶ 1-Sided becomes available as an option.
<table>
<tr><td>Display</td><td>Simplex & Duplex</td><td>Duplex Only</td></tr>
<tr><td>Description</td><td>Does not limit the options for Original ▶ Copy Default to 2-sided copying only.</td><td>Limits the options for Original ▶ Copy Default to 2-sided copying only.</td></tr>
</table></td></tr>
</table>

Tech. Rep. Mode ▶ Tech. Rep. Choice

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Dry Key Set | Select whether to display the Dry key for "User Management" of Utility. If the key is to be displayed, select whether to dry only the Scanner or both Scanner and Drum.<br>Scanner / Scanner & Drum / **Disable** |
| Function Limit | Select whether to limit ("ON") the functions to be set on the control panel or not ("OFF").<br>ON: Enables the functions other than Orig. ▶ Copy and Auxiliary.<br>**OFF**: Enables all functions (no Limit). |
| Special Image Quality | Select whether to enable the selection of Special Image Quality for "Density Priority" of User's Choice (applicable on a case-by-case basis).<br>✱ Touching the "✱" key on the System Set menu selects or cancels this function.<br>✱ Key high-lighted: The Special Image Quality key is displayed.<br>✱ Key not high-lighted: The Special Image Quality key is not displayed. |

<Printer>

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Edge Erase | Set the erase width on the leading, trailing, right, and left edge of the image.<br>Leading / Trailing / Right/Left: 0mm..... **4** ..... 5mm<br>Smaller ◄——► Greater |
| Loop Adjustment | Set the loop length to be formed before the Synchronizing Rollers.<br>1st Drawer / Other Drawers / Duplex & Manual: -5mm..... **0** ..... +5mm<br>Smaller ◄——► Greater |

Tech. Rep. Mode ▶ Tech. Rep. Choice

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Image Density | Set the image density for the printer.<br>✱ The value set for this function becomes the central value of "Print Exposure" of User's Choice.<br>-2 ..... **0** ..... +4<br>Lighter ◄ ► Darker |
| ATDC Sensor Gain | Current: Shows the current ATDC control voltage.<br>Set: Set the ATDC control voltage.<br>✱ If the "Set" value is to be changed, be sure to record the "Current" value.<br>✱ The ATDC Sensor Gain value can be converted to a voltage value using the following equation.<br>ATDC Sensor Gain = 5.1 × 2.2 × [setting value] ÷ 256 (V)<br>123 ..... **155** ..... 186<br>T/C Greater ◄ ► T/C Smaller |
| VG Adjust | Set VG when a fog or void occurs in the image.<br>-2 ..... **0** ..... +2<br>Lighter ◄ ► Darker |

<ADFR>

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Original Stop Position | Set the document stop position in each of the ADFR modes.<br>1-Sided Set / 2-Sided Set / Single Feed Set: -7 ..... **0** ..... +7<br>Original Width Scale end ◄ ► Original Glass end<br>✱ The minimum setting value is -6 only for 2-Sided Set. |
| Registration Loop | Set the loop length to be formed in the original before the Registration Roller of ADFR.<br>-5mm ..... **0** ..... +5mm<br>Smaller ◄ ► Greater |

Tech. Rep. Mode ▶ Tech. Rep. Choice

<Scan-through ADF>

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Registration | Adjust registration in the main and sub scanning directions of the ADF.<br>-127 dot.....**0**.....+127 dot<br>Smaller ◄——► Greater |
| Zoom Adjust | Adjust the scanning zoom ratio in the main and sub scanning directions of the ADF.<br>0.990.....**1.000**..... 1.010<br>Smaller ◄——► Greater |

<IR-Erasure Width>

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| IR-Erasure Width | Set the forced erasure width along the four edges of the paper to erase shadows which are otherwise produced by the Original Scales.<br>**0mm**.....3mm<br>Smaller ◄——► Greater |

**(2) System Input**

- This function allows the Tech. Rep. to change the fixed zoom ratios, set the paper size, define the marketing area, configure for the Key Counter, and input the telephone number.

<Setting Procedure>
1. Touch [System Input] to open the System Input menu screen.
2. Touch the desired subfunction key.

Tech. Rep. Mode ▶ System Input

| Touch Panel Display | Operation |
|---|---|
| Paper Size Input | Set the size of the paper used in each paper source.<br>✱ This function cannot be used for the LCC as its paper is set with its internal DIP switch.<br><Procedure><br>1. Touch the key of the paper source for which the paper size setting is to be changed to show the Paper Size Input screen.<br>2. Touch the desired paper size key.<br>✱ If the 10-key Pad has been selected, enter the FD and CD size of the paper from the 10-Key Pad.<br>3. Touch [END] to validate the paper size setting. |
| Change Fixed Zoom | Change a fixed zoom ratio to a desired value in the range between ×0.250 and ×4.000.<br><Procedure><br>1. Touch the key of the fixed zoom ratio to be changed.<br>2. Press the Clear key to clear the setting and enter the new ratio from the 10-Key Pad.<br>3. Touch [Input] to validate the new setting. |
| Machine Configuration | Displays the machine configuration status. |
| Technical Memo | Enter the serial number and other data. |
| Permit Imaging Cartridge | Select whether to permit the use of an illegal Imaging Cartridge installed. The use is enabled when [Enter] is touched after "Yes" has been selected.<br>✱ It is not possible to disable the use of an Imaging Cartridge once permitted.<br>Yes / **No** |
| Original Size Detecting Option | Set whether the optional Original Size Detecting Sensor is available or not.<br>ON / **OFF** |

### (3) Administrator # Input

- This function allows the Tech. Rep. to set the administrator number that is used to open the "Admin. Management" screen of Utility.

<Setting Procedure>
1. Touch [Administrator # Input] to open the Administrator # Input menu screen.
2. Blank out the numeric data with the Clear key and enter the desired number from the 10-Key Pad.
3. Touch [Enter] to validate the entry of the number.

Tech. Rep. Mode ▶ Administrator # Input

| Touch Panel Display | Operation |
|---|---|
| Administrator # Input | Set the administrator number used to open the "Admin. Management" screen of Utility from the 10-Key Pad.<br>(1 to 8 digits: 0 to 99999999) |

### (4) Counter

- This function maintains the counts of the various counters, thus aiding the Tech. Rep. in performing service jobs.

<Setting Procedure>
1. Touch [Counter] to open the Counter menu screen.
2. Touch [Check] and then the desired counter to open the detailed counter screen.
3. To clear a count, touch [Counter Reset], the key of the counter to be cleared, and [END].

✱ Two or more counters can be selected.

Tech. Rep. Mode ▶ Counter

| Touch Panel Display | Operation |
|---|---|
| Paper | Shows the number of sheets of paper used by the size and type. Each counter may be reset to 0 independently of the others:<br><Paper Counter 1/2><br>Display / Description<br>A3 / A3L<br>B4 / B4L<br>A4 / A4L/C<br>B5 / B5L/C<br>A5 / A5L/C<br>B6 / B6L<br>A6 / A6L<br>11 × 17 / 11" × 17"L<br>11 × 14 / 11" × 14"<br>Letter / Letter L/C<br>Legal / Legal L/C<br>5-1/2 × 8-1/2 / 5-1/2" × 8-1/2" L/C<br><Paper Counter 2/2><br>Display / Description<br>FLS. / FLS.<br>Normal / Normal<br>Recycled / Recycled<br>Special / Special<br>Not for 2-Sided / Not for 2-Sided<br><Clearing a Count><br>Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation. |

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Jam</td><td>Shows the number of misfeeds that have occurred in different parts of the system, together with rates of occurrence (MCBJ, MDBJ). Each counter may be reset to zero independently of the others:
<br><Jam Counter 1/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>MCBJ System</td><td>Average no. of copies made for each paper misfeed:<br>MCBJ Total Counter ÷ Jam Counter (including misfeeds in Finisher)</td></tr>
<tr><td>MCBJ Machine Only</td><td>Average no. of copies made for each paper misfeed:<br>MCBJ Total Counter ÷ Jam Counter (excluding misfeeds in Finisher)</td></tr>
<tr><td>1st Drawer</td><td>No. of misfeeds that occurred at the 1st Drawer of the copier</td></tr>
<tr><td>2nd Drawer</td><td>No. of misfeeds that occurred at the 2nd Drawer of the copier</td></tr>
<tr><td>3rd Drawer</td><td>No. of misfeeds that occurred at the 3rd Drawer of the copier</td></tr>
<tr><td>4th Drawer</td><td>No. of misfeeds that occurred at the 4th Drawer of the copier</td></tr>
<tr><td>5th Drawer</td><td>No. of misfeeds that occurred at the 5th Drawer of the copier</td></tr>
</table>
<br><Jam Counter 2/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Manual Feed</td><td>No. of misfeeds that occurred at the Manual Bypass Tray</td></tr>
<tr><td>Vertical Transport</td><td>No. of misfeeds that occurred at the paper take-up/transport section of the copier</td></tr>
<tr><td>Separator</td><td>No. of misfeeds that occurred at the paper separator section of the copier</td></tr>
<tr><td>Fusing</td><td>No. of misfeeds that occurred at the Fusing Unit of the copier</td></tr>
<tr><td>Duplex Entrance</td><td>No. of misfeeds that occurred at the turnover/storage section of the copier</td></tr>
<tr><td>Duplex Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the Duplex</td></tr>
<tr><td>LCC Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the LCC</td></tr>
</table>
<br><Jam Counter 3/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>LCC Transport</td><td>No. of misfeeds that occurred in the LCC transport section</td></tr>
<tr><td>Shift/2Bin Tray Transport</td><td>No. of misfeeds that occurred in the Shift/Job Tray transport section</td></tr>
<tr><td>Shift/2Bin Tray Exit</td><td>No. of misfeeds that occurred in the Shift/Job Tray exit section</td></tr>
<tr><td>Finisher Horizontal Transport</td><td>No. of misfeeds that occurred in the Finisher horizontal transport section</td></tr>
<tr><td>Finisher Transport</td><td>No. of misfeeds that occurred in the Finisher transport section</td></tr>
<tr><td>Finisher Exit</td><td>No. of misfeeds that occurred in the Finisher exit section</td></tr>
<tr><td>Finisher Staple</td><td>No. of Finisher staple misfeeds that occurred</td></tr>
</table>
* 2Bin Tray = Job Tray</td></tr>
</table>

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Jam</td><td>
<Jam Counter 4/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Finisher Set Transport<br>MDBJ</td><td>No. of misfeeds that occurred in the Finisher Tray<br>Average no. of document transport sequences for each document misfeed:<br>ADFR Document Passage Counter ÷ ADFR Jam Counter</td></tr>
<tr><td>ADF (Scan-through ADF) Feed</td><td>No. of misfeeds that occurred at the paper take-up section of the ADF (Scan-through ADF)</td></tr>
<tr><td>ADF (Scan-through ADF) Transport</td><td>No. of misfeeds that occurred at the document transport section of the ADF (Scan-through ADF)</td></tr>
<tr><td>ADFR Reverse</td><td>No. of misfeeds that occurred at the document turnover and exit sections of the ADFR</td></tr>
<tr><td>SADF</td><td>No. of misfeeds that occurred at the SADF</td></tr>
</table>
<Jam Counter 5/5>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Printer</td><td>No. of misfeeds that occurred due to illegal designation of FCU2</td></tr>
<tr><td>Engine</td><td>No. of misfeeds that occurred due to communication error with engine (VD fault)</td></tr>
</table>
<Clearing a Count><br>Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>PM</td><td>
Shows the frequency of use of each of the PM parts. Each counter may be reset to 0 independently of the others:
<PM Counter 1/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>I/C Life</td><td>No. of revolutions of I/C</td></tr>
<tr><td>Fusing Unit</td><td>No. of times a sheet of paper is fed out</td></tr>
<tr><td>1st Drawer</td><td>No. of sheets of paper fed from the 1st Drawer</td></tr>
<tr><td>2nd Drawer</td><td>No. of sheets of paper fed from the 2nd Drawer</td></tr>
<tr><td>3rd Drawer</td><td>No. of sheets of paper fed from the 3rd Drawer</td></tr>
<tr><td>4th Drawer</td><td>No. of sheets of paper fed from the 4th Drawer</td></tr>
<tr><td>5th Drawer</td><td>No. of sheets of paper fed from the 5th Drawer</td></tr>
</table>
<PM Counter 2/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>LCC Parts 1</td><td>No. of sheets of paper fed from the LCC (for 200k)</td></tr>
<tr><td>LCC Parts 2</td><td>No. of sheets of paper fed from the LCC (for 300k)</td></tr>
<tr><td>Other PM Parts 1</td><td>No. of print cycles run (for 100k)</td></tr>
<tr><td>Other PM Parts 2</td><td>No. of print cycles run (for 150k)</td></tr>
<tr><td>Other PM Parts 3</td><td>No. of print cycles run (for 60k/120k)</td></tr>
<tr><td>1-Sided</td><td>No. of times a 1-sided original is fed through</td></tr>
<tr><td>2-Sided</td><td>No. of times a 2-sided original is fed through</td></tr>
</table>
</td></tr>
</table>

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>PM</td><td>
<PM Counter 3/3>
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>SADF<br>IR 1<br>IR 2<br>2 Bin Tray<br>Toner Pages</td><td>No. of single feeds<br>No. of scan motions (for 60k)<br>No. of scan motions (120k)<br>No. of cycles of feeding paper out into Job Tray<br>No. of pages equivalent to the no. of black dots on A4 original with B/W 5%</td></tr>
</table>
* 2Bin Tray = Job Tray<br>
<Clearing a Count><br>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.<br>
* I/C Life cannot be cleared.
</td></tr>
<tr><td>Trouble</td><td>
Shows the number of malfunctions that have occurred in different parts of the system. Each counter may be reset to 0 independently of the others:<br>
<Trouble Counter 1/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0000<br>C0010<br>C0045<br>C004C</td><td>Main Motor<br>I/C Motor<br>Cooling Fan<br>Ventilation Fan</td><td>C004E<br>C0070<br>C0500<br>C0510</td><td>Cooling Fan (Power Supply)<br>Toner Bottle Motor<br>Fusing Warming-up<br>Fuser Low Temperature</td></tr>
</table>
<Trouble Counter 2/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0520<br>C0650<br>C0651<br>C0990</td><td>Fuser High Temperature<br>Home Sensor<br>Left Sensor<br>LCC Transport Motor</td><td>C0991<br>C0995<br>C0999<br>C099D</td><td>LCC Lift 1 Limit<br>LCC Lift Motor<br>LCC Lift 2 Limit<br>LCC Communication</td></tr>
</table>
<Trouble Counter 3/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0B00<br>C0B0F<br>C0B30<br>C0B38</td><td>Transport Drive Motor<br>Horiz. Trans. Route Switch<br>Paper Aligning Bar Unit<br>Paper Standard Board Unit</td><td>C0B4D<br>C0B4E<br>C0B50<br>C0B80</td><td>Assist Tray Unit<br>Transaction Tray Unit<br>Staple Unit<br>Shift Tray Shift</td></tr>
</table>
<Trouble Counter 4/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C0BA0<br>C0F32<br>C0F33<br>C1038</td><td>Elevate Motor<br>ATDC Sensor<br>ATDC Adjust<br>Engine Connection</td><td>C1300<br>C1330<br>C133A</td><td>Polygon Motor<br>Communication Error (VSYNC)<br>Communication Error (G/A)</td></tr>
</table>
</td></tr>
</table>

Tech. Rep. Mode ▶ Counter

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>Trouble</td><td>
<Trouble Counter 5/5>
<table>
<tr><th>Malfunction Code</th><th>Location</th><th>Malfunction Code</th><th>Location</th></tr>
<tr><td>C133B<br>C13C0<br>C13D0</td><td>Communication Error (Option)<br>I/C Initial Error<br>EEPROM</td><td>C13F0<br>C18XX</td><td>HSYNC (SOS)<br>Printer Controller Error</td></tr>
</table>
<Clearing a Count><br>
Touch the item key whose count is to be cleared and press the Clear key. If a count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>Device</td><td>
Shows the numbers of prints for different applications. It also allows the Tech. Rep. to clear each counter.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Copier</td><td>No. of prints made by copier</td></tr>
<tr><td>Printer</td><td>No. of prints made by printer</td></tr>
<tr><td>Report Print</td><td>No. of report prints made</td></tr>
<tr><td>Fax Print</td><td>No. of fax prints made</td></tr>
<tr><td>Fax Transmission</td><td>No. of prints made for fax transmission</td></tr>
</table>
<Clearing a Count><br>
Select the counter to be cleared with the item key and press the Clear key. If the count is accidentally cleared, pressing the Interrupt key will undo the clear operation.
</td></tr>
<tr><td>Maintenance</td><td>
• This function allows the Tech. Rep. to set the number of copies to be made before the Maintenance Call reminder is given. (1k ~ 9999k)<br>
• It shows the current count value and the above setting. Each counter may be reset to 0 independently of the others:<br>
• When the count reaches the preset value, the icon "⚠" appears in the Status Display.<br>
✱ When "Call Indicated" is selected for "Maintenance Call" available from Tech. Rep. Choice.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Maintenance (Set)</td><td>The Maintenance Call reminder is given when the count reaches the preset value.</td></tr>
<tr><td>Maintenance (Count)</td><td>Counts one for each copy made.</td></tr>
</table>
<Setting a Count><br>
1. Touch [Maintenance (Set)] and then press the Clear key to clear the count. If the count is accidentally cleared, pressing the interrupt key will undo the clear operation.<br>
2. Enter the desired value from the 10-Key Pad.<br><br>
<Clearing a Count><br>
Touch [Maintenance (Count)] and then press the Clear key to clear the count. If the count is accidentally cleared, pressing the interrupt key will undo the clear operation.
</td></tr>
</table>

**(5) Function**

- This function allows the Tech. Rep. to run the various function tests and make adjustments.

<Setting Procedure>
1. Touch [Function] to open the Function menu screen.
2. Select the particular function to be run.

Tech. Rep. Mode ▶ Function

| Touch Panel Display | Operation |
|---|---|
| F1 | <Paper Passage><br>A paper passage test is carried out after the copier has completed warming up.<br><Procedure><br>1. Select the paper source key. (Touch [Duplex] to check for paper passage from the Duplex Unit.)<br>✱ If the paper source is not loaded with paper, an Add Paper mark appears at that source.<br>2. Press the Start key to start the test cycle. The test runs until the paper source runs out of paper.<br>3. If the Stop key is pressed, the copier feeds the current sheet of paper out before halting. (Another press of the Start key will resume the test cycle.) |
| F2 | <HV Output Setting><br>Set the output of each HV.<br>✱ This function is only for factory setting and should never be used in the field. |
| F7-1 | <Original Size Detecting Sensor Adjustment><br>Automatically adjusts the Original Size Detecting Sensors.<br><Procedure><br>1. Stack five sheets of A3 or 11" × 17" paper on the Original Glass and lower the Original Cover.<br>2. Press the Start key to let the system start the adjustment sequence.<br>✱ The system automatically stops as soon as the adjustment sequence is completed. It can nonetheless be halted in mid-sequence with the Stop key, which, however, results in incorrect size detection as the adjustment sequence is incomplete. |
| F8 | <ATDC Sensor Automatic Adjustment><br>Automatically makes the ATDC Sensor adjustment.<br><Procedure><br>Press the Start key to let the system start the adjustment sequence.<br>✱ The voltage automatically adjusted by this function is displayed for ATDC Sensor Gain of the Level History data. |

Tech. Rep. Mode ▶ Function

| Touch Panel Display | Operation |
|---|---|
| F12 | <Test Pattern><br>Outputs a test pattern.<br>✱ If 2-sided is specified, the system outputs a test pattern in the 2-sided mode.<br><Procedure><br>1. Touch the desired paper source key. (Touch [Duplex] for test pattern output on paper fed from the Duplex Unit.)<br>✱ If the paper source is not loaded with paper, an Add Paper mark appears at that source.<br>2. Press the Start key to start the output sequence. (It continues until the paper source runs out of paper.)<br>3. Press the Stop key to halt the sequence. |

**(6) I/O Check**

- This function displays the details of inputs to each sensor.

<Setting Procedure>
1. Touch [I/O Check] to open the I/O Check menu screen.
2. Touch the desired subfunction key.

Tech. Rep. Mode ▶ I/O Check

| Touch Panel Display | Operation |
|---|---|
| Scan-through ADF | |
| IR | *NOTE*<br>• *For details, see TROUBLESHOOTING.* |
| ADFR | |
| Output Option | |
| Printer | |

**(7) Movement Check**

- This function runs a specified mechanism to check for operation.

<Setting Procedure>
1. Touch [Movement Check] to open the Movement Check menu screen.
2. Touch the desired subfunction.

Tech. Rep. Mode ▶ Movement Check

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>ADF Paper Passage</td><td>Feeds paper through the ADF in the specified mode to check for correct operation.<br><table><tr><td>1-sided No Detect</td><td>1-sided Mixed Orig</td><td>2-sided</td></tr><tr><td colspan="2">SADF</td></tr></table><br><Procedure><br>1. Select ADF Paper Passage.<br>2. Touch the desired mode key.<br>3. Load originals in the ADF.<br>4. Press the Start key to let the ADF start feeding originals.<br>✱ Pressing of the Start key temporarily stops the ADF. (Another press will let the ADF resume the sequence.)<br>✱ The sequence is completed when there is no more originals in the ADF; however, it is possible to halt the sequence in mid-operation by pressing the Stop key.</td></tr>
<tr><td>Scanner</td><td>• Drives the CCD.<br>• Turns ON the Exposure Lamp.<br>• Moves the Scanner according to the set value.</td></tr>
<tr><td>Exp. Lamp Check</td><td>Checks for the intensity of the Exposure Lamp light.</td></tr>
</table>

**(8) RD Mode (SMART)**

✱ "SMART" is displayed for the inch areas.

Tech. Rep. Mode ▶ RD Mode

| Touch Panel Display | Setting |
|---|---|
| RD Mode | For making the initial settings of the copier for the Data Terminal. |
| ID Code | Enter a 7-digit ID code (0000001 to 9999999) from the 10-Key Pad to enable making the following settings. When the ID code is entered and transmitted after the initial settings have been made, it executes the transmission of MAINT. START to the Center.<br>✱ 0000000 is invalid. |
| Maintenance | Used to make the initial settings and various transmissions. |
| DT Setting | Enter the following data. |
| CT-ID (Password) | Using the 10-Key Pad, enter the 4-digit ID number (0001 to 9999) of the Center which has been programmed in the Center personal computer.<br>✱ 0000 is invalid. |
| DT-ID | Using the 10-Key Pad, enter the 6-digit ID number (000001 to 999999) of the Data Terminal.<br>✱ 000000 is invalid. |
| TEL No. | Enter the 19-or-less-digit phone number of the modem connected to the Center personal computer from the 10-Key Pad.<br>✱ In addition to the 10-Key Pad and Clear key, use the following keys to enter the phone number.<br>Interrupt key: For a pause (3 sec. or more), "-"<br>Pause key: For a pause (3 sec. or more), "-"<br>P key: For a "pulse" dialing, "P"<br>T key: For a "tone" dialing, "T"<br>W key: For a wait code (waiting for a signal from the other party), "W"<br>✱ key: For an ISDN subaddress, "✱"<br># key: For switching from the extension line to outside line, or vice versa, "#" |
| Initial Transmission | Used to perform the initial transmission from the copier to the Center to check for correct communication when the Data Terminal has been set up. |
| Counter Clear | Used to clear the count of the spare counter set by the Center.<br><Procedure><br>1. Touch [Counter Clear] to open the Counter Clear screen.<br>2. Touch the number assigned to the counter to be cleared. |
| Call Completion | Used by the Tech. Rep. to notify the Center that his/her service job for the copier has been completed. |

Tech. Rep. Mode ▶ RD Mode

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| RD Mode | ——— |
| RAM Clear | Reinitializes the Data Terminal.<br>YES / **NO** |
| Common DT | Set the following functions. |
| Dial Mode | Select the type of telephone line of the user.<br>**Tone** / Pulse |
| Auto Receive | Choose "Yes" or "No" for the auto reception function.<br>**YES** / NO<br>✱ Select "Yes" if the line is dedicated to the Data Terminal. |
| Result Code | Enter the result code for connection to the modem when the line is connected. (0 to 999) |

**(9) ROM Version**

Tech. Rep. Mode ▶ ROM Version

<table>
<tr><th>Touch Panel Display</th><th>Operation</th></tr>
<tr><td>ROM Version</td><td>Displays the current ROM version information.<br>✱ No version information is displayed for a machine that is not connected to the system.<br><Procedure><br>1. Touch [ROM Version] to open the ROM Version screen.<br>2. The screen shows the ROM version information of various machines configured in the system.
<table>
<tr><th colspan="2">Display</th><th>Description</th></tr>
<tr><td>MSC</td><td>—</td><td>MFB Board</td></tr>
<tr><td>Message</td><td>IC4</td><td>MFB Board</td></tr>
<tr><td>Printer</td><td>IC1</td><td>Master Board</td></tr>
<tr><td>ADFR</td><td>IC3</td><td>ADFR Board</td></tr>
<tr><td>LCC</td><td>IC7</td><td>LCC Board</td></tr>
<tr><td>Finisher</td><td>IC3</td><td>Finisher/Job Tray Board</td></tr>
<tr><td>IIF</td><td>—</td><td>IIF2 Board</td></tr>
</table>
</td></tr>
</table>

**(10) Level History**

- This function is used to show the various level histories which are changed according to the operating conditions of the copier and user requirements.

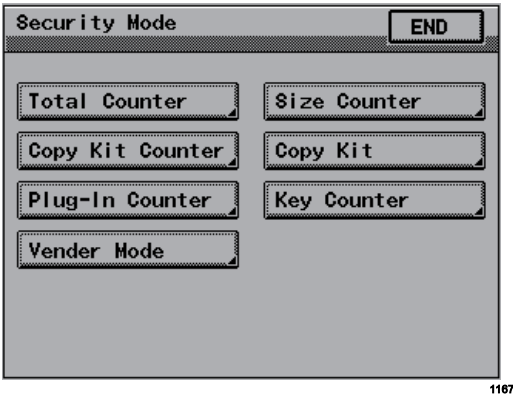
Tech. Rep. Mode ▶ Level History

<table>
<tr><th>Touch Panel Display</th><th>Setting</th></tr>
<tr><td>Level History</td><td>
<ATDC Set><br>
Shows the voltage set by ATDC Sensor Automatic Adjustment (F8).<br>
✱ The Level History data is updated when the ATDC Sensor Automatic Adjustment (F8) is completed.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>123 to 186 (steps)</td><td>1 Step</td></tr>
</table>
<ATDC Current><br>
Shows the current, approximate ATDC Sensor T/C setting in percentage.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>3.0 to 19.0 (%)</td><td>0.5%</td></tr>
</table>
<Vg Current><br>
Displays the grid voltage as corrected through image stabilization and related functions.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>-534 to -748 (V)</td><td>-</td></tr>
</table>
<Vb Current><br>
Displays the developing bias voltage as corrected through image stabilization and related function.
<table>
<tr><th>Variable Range</th><th>Increments</th></tr>
<tr><td>-409 to -623 (V)</td><td>-</td></tr>
</table>
</td></tr>
</table>

# 6 SECURITY MODE

- This function allows the Tech. Rep. to make various settings.

## 6-1. Security Mode Menu Screen




1167S011CA

## 6-2. Security Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by one of the following methods:
   A. With the copier turned ON, press the Tech. Rep. Setting Switch.
   B. With the Meter Count screen opened from Utility, press the following keys in this order:

   Stop Key → 0 → 0 → Stop Key → 0 → 1

2. Enter the Security mode by pressing the following keys in this order:

   Stop Key → 9

3. Select the particular Security mode to be set.
4. Make the necessary settings by following the instructions given sequentially on the screen.

✱ The Function selected is highlighted.

<Exiting the Mode>

Perform any one of the following steps to go back to the Basic screen.

- Press the Panel Reset key and Touch [Exit] on the Tech. Rep. Mode screen.
- Touch [END] on the Security Mode screen. Then touch [Exit] on the Tech. Rep. Mode screen.

## 6-3. Settings in the Security Mode

Tech. Rep. Mode ▶ Security Mode

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Total Counter</td><td>Select the conditions by which the Total Counter count is increased.
<table>
<tr><td>Mode 1</td><td>1 count per 1 copy cycle (normal mode)</td></tr>
<tr><td>Mode 2</td><td>Multiple count-up according to paper size and 1/2-sided copying</td></tr>
<tr><td>Mode 3</td><td>Multiple count-up according to paper size and 1/2-sided copying</td></tr>
</table>
✱ See the Count-up Table for details.</td></tr>
<tr><td>Size Counter</td><td>Select the size of the paper to be counted by the Size Counter.
<table>
<tr><td>No Count</td><td>A3<br>11×17</td><td>A3 / B4<br>11×17<br>Legal</td><td>A3 /11×17<br>B4 /11×14<br>FLS/Legal</td><td>A6</td></tr>
</table>
✱ See the Count-up Table for details.</td></tr>
<tr><td>Copy Kit</td><td>• Allows for setting the desired threshold before the Maintenance Call reminder is given.<br>• Displays both the current value and the above setting value. Each counter can also be reset independently of the other.<br>• When the current value (Current) becomes the setting value (Set), the icon "⚠" appears in the Status Display if "Mode 2" is selected for "Copy Kit Counter" and the Maintenance Call reminder (M4) is displayed if "Mode 3" is selected for "Copy Kit Counter."<br>✱ Whether the initiation of a new copy cycle is inhibited or not when the current value exceeds the setting value depends on the setting made with Copy Kit Counter.
<table>
<tr><th>Display</th><th>Description</th></tr>
<tr><td>Set</td><td>Gives a Maintenance Call when Current value reaches Set value.</td></tr>
<tr><td>Current</td><td>Counts up for each copy made.</td></tr>
</table>
<Counter Setting Procedure><br>1. Touch [Set] and press the Clear key to clear the current setting. If the setting is accidentally cleared, pressing of the Interrupt key will undo the clear operation.<br>2. Enter the desired value from the 10-Key Pad.<br><Clearing the Count><br>Touch [Current] and press the Clear key to clear the count. If the count is accidentally cleared, pressing of the Interrupt key will undo the clear operation.</td></tr>
</table>

Tech. Rep. Mode ▶ Security Mode

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Copy Kit Counter</td><td>Select whether to set the count or not for the Copy Kit Counter and select whether to inhibit the initiation of a new copy cycle or not when the Current value reaches Set value.
<table>
<tr><td>Mode 1</td><td>No counting</td></tr>
<tr><td>Mode 2</td><td>Counted and permits copying even when the Set value is reached.</td></tr>
<tr><td>Mode 3</td><td>Counted and inhibits copying when the Set value is reached.</td></tr>
</table></td></tr>
<tr><td>Plug-In Counter</td><td>Select the condition by which the Key Counter count is increased.
<table>
<tr><td>Copies Made</td><td>Copy Cycles</td></tr>
</table>
* See the Count-up Table for details.</td></tr>
<tr><td>Key Counter</td><td>Set whether a Key Counter is plugged in ("ON") or not ("OFF").
<table>
<tr><td>ON</td><td>OFF</td></tr>
</table></td></tr>
<tr><td>Vender Mode</td><td>Select the medium to be used when the Key Counter or Vender is used.<br>* This function is not valid if “OFF” is selected for “Key Counter.”
<table>
<tr><td>OFF</td><td>Coin</td><td>Card</td></tr>
</table></td></tr>
</table>

Tech. Rep. Mode ▶ Security Mode

<Count-up Table>

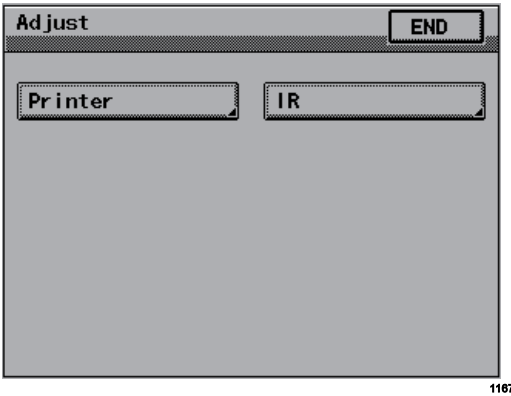
| Copying | | 1-Sided | | | | | | 2-Sided | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| Size | | Size other than those set | | | Set size | | | Size other than those set | | | Set size | | |
| Total | | Mode | | | Mode | | | Mode | | | Mode | | |
| | | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 | 1 | 2 | 3 |
| Total (mechanical, electronic) | | 1 | | | 1 | 2 | 2 | 2 | | | 2 | 4 | 4 |
| Size (electronic) | | 0 | | | 1 | 1 | 2 | 0 | | | 2 | 2 | 0 |
| 2-Sided Total (electronic) | | 0 | | | 0 | | | 1 | 1 | 2 | 1 | 1 | 4 |
| 2-Sided Size (electronic) | | 0 | | | 0 | | | 0 | | | 1 | 1 | 4 |
| Total by account | | 1 | | | 1 | 2 | 2 | 2 | | | 2 | 4 | 4 |
| Size by account | | 0 | | | 1 | 1 | 2 | 0 | | | 2 | 2 | 4 |
| Key (mechanical) | Counting copies | 1 | | | 1 | 2 | 2 | 1 | 2 | 2 | 1 | 4 | 4 |
| | Counting copy cycles | 1 | | | 1 | 2 | 2 | 2 | | | 2 | 4 | 4 |

0: No count 1: 1 count 2: 2 counts 3: 3 counts 4: 4 counts

# 7 ADJUST MODE

- Adjust mode is for adjustments to be made before shipment at the factory. As a rule, use this mode only when MFB Board UN2, or EEPROM (IC3A) on Master Board PWB-A has been replaced with a new one.

## 7-1. Adjust Mode Menu Screen




1167S012CA

## 7-2. Adjust Mode Function Setting Procedure

<Setting Procedure>

1. Set the copier into the Tech. Rep. mode by the following method:

- With the Meter Count screen opened from Utility, press the following keys in this order.

[Stop Key] → [0] → [0] → [Stop Key] → [0] → [1]

2. Enter the Adjust mode by pressing the following keys in this order:

[Stop Key] → [Start Key]

3. Select the particular Adjust mode function to be set.
4. Make the necessary settings by following the instructions given sequentially on the screen.

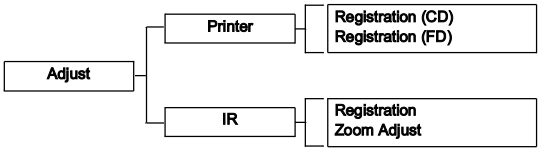
✱ The function selected is highlighted.

<Exiting the Mode>

Perform any one of the following steps to go back to the Basic screen.

- Press the Panel Reset key and Touch [Exit] on the Tech. Rep. Mode screen.
- Touch [END] on the Adjust mode screen. Then touch [Exit] on the Tech. Rep. Mode screen.

## 7-3. Adjust Mode Function Tree




## 7-4. Settings in the Adjust Mode

**(1) Printer**

- This function is used to enter the adjustment values as they relate to the printer.

<Setting Procedure>
1. Touch [Printer] to open the Printer screen.
2. Select the desired subfunction.

Tech. Rep. Mode ▶ Adjust

<table>
<tr><th>Touch Panel Display</th><th>Setting (The default is Highlighted ).</th></tr>
<tr><td>Registration (CD)</td><td>Adjust registration of the printer in the main scanning direction.<br><table><tr><td>1st Drawer</td><td rowspan="3">-4.0mm.....0.....+4.0mm</td></tr><tr><td>2nd Drawer</td></tr><tr><td>3rd Drawer</td></tr><tr><td>4th Drawer</td><td rowspan="3">Advanced timing ◄——► Retarded timing</td></tr><tr><td>5th Drawer</td></tr><tr><td>Duplex</td></tr></table>✱ Adjust “Duplex” after adjustments have been completed for all drawers.</td></tr>
<tr><td>Registration (FD)</td><td>Adjust registration of the printer in the sub-scanning direction.<br><table><tr><td>-19.....0.....+19</td></tr><tr><td>Advanced timing ◄——► Retarded timing</td></tr></table></td></tr>
</table>

**(2) IR**

- This function is used to enter the adjustment values as they relate to the IR.

<Setting Procedure>
1. Touch [IR] to open the IR screen.
2. Select the desired subfunction.

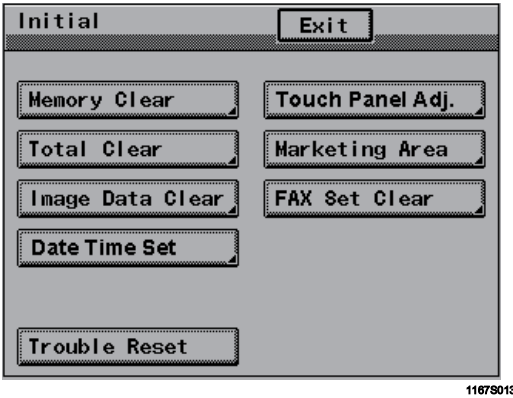
Tech. Rep. Mode ▶ Adjust

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Registration | Adjust registration of the Scanner in the main and sub-scanning directions.<br>-127 dot.....**0**.....+127 dot<br>Smaller ◄——► Greater |
| Zoom Adjust | Adjust the scanning zoom ratio of the Scanner in the main and sub-scanning directions.<br>0.990.....**1.000**.....1.010<br>Smaller ◄——► Greater |

# 8 INITIAL MODE

- Initial mode is used to initialize the various service functions.

## 8-1. Initial Mode Menu Screen




1167S013CB

## 8-2. Initial Mode Function Setting Procedure

<Setting Procedure>

1. Enter the Initial mode by pressing the following keys in this order:

| Warm Restart Switch ON | ➡ | Enter "3" from the 10-Key Pad when "." appears at the center on the left side of the screen while the start-up screen is being displayed. |
|---|---|---|

2. Select the particular Initial mode function to be set.
3. Make the necessary settings by following the instructions given sequentially on the screen.

✱ The function selected is highlighted.

<Exiting the Mode>

- Touch [Exit] on the Initial mode screen to go back to the Basic screen.

## 8-3. Settings in the Initial Mode

Tech. Rep. Mode ▶ Initial

| Touch Panel Display | Setting (The default is **Highlighted** ). |
|---|---|
| Memory Clear | Clears all data except the electronic counters, Adjust, Copy Track-related, and DT-related settings.<br>Yes / **NO** |
| Touch Panel Adj. | Corrects deviation in the sensitive area of the Touch Panel.<br><Procedure><br>Sequentially touch the four points marked with + on the screen as instructed by the arrow. |
| Total Clear | Clears all of the electronic counters and Copy Track-related data.<br>Yes / **NO** |
| Marketing Area | Selects the settings for the fixed zoom ratios, paper sizes, and others according to the marketing area.<br>**MJ** / MC / MH / Others |
| Image Data Clear | Clears the image data stored in file memory of the MFB Board.<br>Yes / **NO** |
| FAX Set Clear | Clears the fax-related settings.<br>✱ Two or more items can be selected.<br>Own Setting / The Address / Transmission Manage / Soft Switch — Yes / **NO** |
| Date Time Set | Sets the time-of-day and date. |
| Trouble Reset | Resets all malfunctions including the Fusing ones (C05XX).<br>✱ Malfunctions other than Fusing ones can be reset by turning OFF and ON the Power Switch and opening and closing the Side Cover. |

# Di350

# DIS/REASSEMBLY, ADJUSTMENT

# Safety Precautions for Inspection and Service

When performing inspection and service procedures, observe the following precautions to prevent accidents and ensure utmost safety.

* Depending on the model, some of the precautions given in the following do not apply.

Different markings are used to denote specific meanings as detailed below.

**WARNING** Indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury.

**CAUTION** Indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

The following graphic symbols are used to give instructions that need to be observed.

Used to call the service technician's attention to what is graphically represented inside the marking (including a warning).

Used to prohibit the service technician's from doing what is graphically represented inside the marking.

Used to instruct the service technician's to do what is graphically represented inside the marking.

## WARNING

1. Always observe precautions.
   - Parts requiring special attention in this product will include a label containing the mark shown on the left plus precautionary notes. Be sure to observe the precautions.
   - Be sure to observe the "Safety Information" given in the Operator's Manual.

2. Before starting the procedures, be sure to unplug the power cord.
   - This product contains a high-voltage unit and a circuit with a large current capacity that may cause an electric shock or burn.
   - The product also contains parts that can jerk suddenly and cause injury.
   - If this product uses a laser, laser beam leakage may cause eye damage or blindness.

3. Use the specified parts.
   - For replacement parts, always use the genuine parts specified in the manufacturer's parts manual. Installing a wrong or unauthorized part could cause dielectric breakdown, overload, or undermine safety devices resulting in possible electric shock or fire.
   - Replace a blown electrical fuse or thermal fuse with its corresponding genuine part specified in the manufacturer's parts manual. Installing a fuse of a different make or rating could lead to a possible fire. If a thermal fuse blows frequently, the temperature control system may have a problem and action must be taken to eliminate the cause of the problem.

4. Handle the power cord with care and never use a multiple outlet.

- Do not break, crush or otherwise damage the power cord. Placing a heavy object on the power cord, or pulling or bending it may damage it, resulting in a possible fire or electric shock.
- Do not use a multiple outlet to which any other appliance or machine is connected.
- Be sure the power outlet meets or exceeds the specified capacity.

5. Be careful with the high-voltage parts.

- A part marked with the symbol shown on the left carries a high voltage. Touching it could result in an electric shock or burn. Be sure to unplug the power cord before servicing this part or the parts near it.

6. Do not work with wet hands.

- Do not unplug or plug in the power cord, or perform any kind of service or inspection with wet hands. Doing so could result in an electric shock.

7. Do not touch a high-temperature part.

- A part marked with the symbol shown on the left and other parts such as the exposure lamp and fusing roller can be very hot while the machine is energized. Touching them may result in a burn.
- Wait until these parts have cooled down before replacing them or any surrounding parts.

8. Maintain a grounded connection at all times. (This item may not apply in the USA.)

- Be sure to connect the ground wire to the ground terminal even when performing an inspection or repair. Without proper grounding, electrical leakage could result in an electric shock or fire.
- Never connect the ground wire to a gas pipe, water pipe, telephone ground wire, or a lightning conductor.

9. Do not remodel the product.

- Modifying this product in a manner not authorized by the manufacturer may result in a fire or electric shock. If this product uses a laser, laser beam leakage may cause eye damage or blindness.

10. Restore all parts and harnesses to their original positions.

- To promote safety and prevent product damage, make sure the harnesses are returned to their original positions and properly secured in their clamps and saddles in order to avoid hot parts, high-voltage parts, sharp edges, or being crushed.
- To promote safety, make sure that all tubing and other insulating materials are returned to their original positions. Make sure that floating components mounted on the circuit boards are at their correct distance and position off the boards.

## CAUTION

1. Precautions for Service Jobs

- A toothed washer and spring washer, if used originally, must be reinstalled. Omitting them may result in contact failure which could cause an electric shock or fire.
- When reassembling parts, make sure that the correct screws (size, type) are used in the correct places. Using the wrong screw could lead to stripped threads, poorly secured parts, poor insulating or grounding, and result in a malfunction, electric shock or injury.
- Take great care to avoid personal injury from possible burrs and sharp edges on the parts, frames and chassis of the product.
- When moving the product or removing an option, use care not to injure your back or allow your hands to be caught in mechanisms.

2. Precautions for Servicing with Covers and Parts Removed

- Wherever feasible, keep all parts and covers mounted when energizing the product.
- If energizing the product with a cover removed is absolutely unavoidable, do not touch any exposed live parts and use care not to allow your clothing to be caught in the moving parts. Never leave a product in this condition unattended.
- Never place disassembled parts or a container of liquid on the product. Parts falling into, or the liquid spilling inside, the mechanism could result in an electric shock or fire.
- Never use a flammable spray near the product. This could result in a fire.
- Make sure the power cord is unplugged before removing or installing circuit boards or plugging in or unplugging connectors.
- Always use the interlock switch actuating jig to actuate an interlock switch when a cover is opened or removed. The use of folded paper or some other object may damage the interlock switch mechanism, possibly resulting in an electric shock, injury or blindness.

3. Precautions for the Working Environment

- The product must be placed on a flat, level surface that is stable and secure.
- Never place this product or its parts on an unsteady or tilting workbench when servicing.
- Provide good ventilation at regular intervals if a service job must be done in a confined space for a long period of time.
- Avoid dusty locations and places exposed to oil or steam.
- Avoid working positions that may block the ventilation ports of the product.

4. Precautions for Handling Batteries

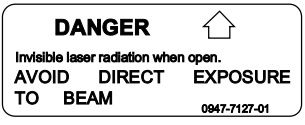
- Replace a rundown battery with the same type as specified in the manufacturer's parts manual.
- Before installing a new battery, make sure of the correct polarity of the installation or the battery could burst.
- Dispose of used batteries according to the local regulations. Never dispose of them at the user's premises or attempt to try to discharge one.

5. Precautions for the Laser Beam (Only for Products Employing a Laser)

- Removing the cover marked with the following caution label could lead to possible exposure to the laser beam, resulting in eye damage or blindness. Be sure to unplug the power cord before removing this cover.
- If removing this cover while the power is ON is unavoidable, be sure to wear protective laser goggles that meet specifications.
- Make sure that no one enters the room when the machine is in this condition.
- When handling the laser unit, observe the "Precautions for Handling Laser Equipment."

注意- ここを開くと不可視レーザ光が出ます。ビームを直接見たり、触れたりしないでください。
CAUTION- INVISIBLE LASER RADIATION WHEN OPEN AVOID EXPOSURE TO BEAM
VORSICHT- UNSICHTBARE LASERSTRAHLUNG WENN ABDECKUNG GEÖFFNET NICHT DEM STRAHL AUSSETZEN
ADVARSEL- USYNLIG LASERSTRÅLING NÅR DEKSEL ÅPNES UNNGÅ EKSPONERING FOR STRÅLEN
VARO! AVATTAESSA OLET ALTTIINA NÄKYMÄTTÖMÄLLE LASERSÄTEILYLLE ÄLÄ KATSO SÄTEESEEN
ADVARSEL- USYNLIG LASERSTRÅLING VED ÅBNING UNDGÅ UDSÆTTELSE FOR STRÅLING
VARNING- OSYNLIG LASERSTRÅLNING NÄR DENNA DEL ÄR ÖPPNAD STRÅLEN ÄR FARLIG
注意： 当您打开这里时，会出现内眼看不见的激光射线，请不要直视或接触光线。

1167P001AA

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## Other Precautions

- To reassemble the product, reverse the order of disassembly unless otherwise specified.
- While the product is energized, do not unplug or plug connectors into the circuit boards or harnesses.
- The magnet roller generates a strong magnetic field. Do not bring it near a watch, floppy disk, magnetic card, or CRT tube.
- An air gun and vacuum cleaner generates a strong electrostatic charge that can destroy the ATDC sensor and other sensors. Before cleaning a component with one of these devices, be sure to remove all the sensors. Otherwise, use a blower brush and cloth when cleaning parts.
- When handling circuit boards with MOS ICs, observe the "INSTRUCTIONS FOR HANDLING THE PWBs WITH MOS ICs" (applicable only to the products using MOS ICs).
- The PC Drum is a very delicate component. Observe the precautions given in "HANDLING OF THE PC DRUM" because mishandling may result in serious image problems.
- Note that replacement of a circuit board may call for readjustments or resetting of particular items, or software installation.
- After completing a service job, perform a safety check. Make sure that all parts, wiring and screws are returned to their original positions.
- Check the area surrounding the service site for any signs of damage, wear or need of repair.
- Do not pull out the toner hopper while the toner bottle is turning. This could result in a damaged hopper motor or locking mechanism.
- If the product is to be run with the front door open, make sure that the toner hopper is in the locked position.

## Used Batteries Precautions

ALL Areas

CAUTION

Danger of explosion if battery is incorrectly replaced.
Replace only with the same or equivalent type recommended by the manufacturer.
Dispose of used batteries according to the manufacturer's instructions.

Germany

VORSICHT!

Explosionsgefahr bei unsachgemäßem Austausch der Batterie.
Ersatz nur durch denselben oder einen vom Hersteller empfohlenen ähnlichen Typ.
Entsorgung gebrauchter Batterien nach Angaben des Herstellers.

France

ATTENTION

Ily a danger d'explosion s'ily a remplacement incorrec de la batterie.
Remplacer uniquement avec une batterie du meme type ou d'un type équivalent recommande par le constructueur.
Mettre au rebut les batteries usageés conformément aux instructions du fabricant.

Denmark

ADVARSEL!

Lithiumbatteri - Eksplosionsfare ved fejlagtig håndtering Udskiftning må kun ske med batteri af samme fabrikat og type.
Levér det brugte batteri tilbage til leverandøren.

Norway

ADVARSEL

Eksplosjonsfare ved feilaktig skifte av batteri.
Benytt samme batteritype eller en tilsvarende type anbefalt av apparatfabrikanten.
Brukte batterier kasseres i henhold til fabrikantens instruksjoner.

Sweden

VARNING

Explosionsfara vid felaktigt batteribyte.
Använd samma batterityp eller en ekvivalent typ som rekommenderas av apparattillverkaren.
Kassera använt batteri enligt fabrikantens instruktion.

Finland

VAROITUS

Paristo voi räjähtää, los se on virheellisesti asennettu.
Vaihda paristo ainoastaan laitevalmistajan suosittelemaan tyyppiin. Hävitä Käytetty paristo valmistajan ohjeiden mukaisesti.

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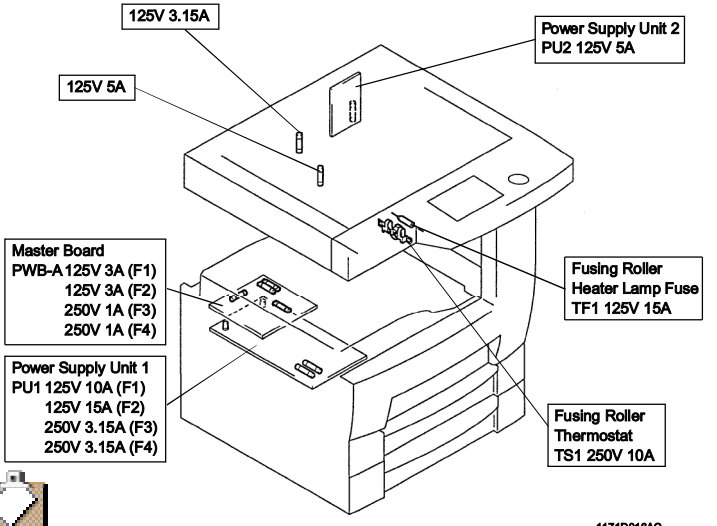
4-1. INSTALLATION OF THE KEY COUNTER SOCKET (OPTION) ..... D-53
4-2. REMOUNTING THE EEPROM (IC3A) ..... D-54

# 1 SERVICE INSTRUCTIONS

## 1-1. IDENTIFICATION OF FUSES AND CIRCUIT BREAKERS




## 1-2. PRECAUTIONS FOR HANDLING THE LASER EQUIPMENT

- The laser used in this copier is a semiconductor laser having the following specifications.

| | |
|---|---|
| Max. power: | 5mW |
| Output wavelength: | 770~80nm |

- When laser protective goggles are to be used, select ones with a lens conforming to the above specifications.
- When a disassembly job needs to be performed in the laser beam path, such as when working around the printerhead and PC Drum, be sure first to turn the copier OFF.
- If the job requires that the copier be left ON, take off your watch and ring and wear laser protective goggles.
- A highly reflective tool can be dangerous if it is brought into the laser beam path. Use utmost care when handling tools on the user's premises.
- The printerhead is not maintainable in the field. It is to be replaced as an assembly including the control board. Never, therefore, attempt to remove the laser diode or adjust trimmers on the control board.

## 1-3. INSTRUCTIONS FOR HANDLING THE PWBs WITH MOS ICs

**The following precautions must be observed when handling P.W. Boards with MOS (Metal Oxide Semiconductor) ICs.**

**During Transportation/Storage:**
- During transportation or when in storage, new P.W. Boards must not be indiscriminately removed from their protective conductive bags.
- Do not store or place P.W. Boards in a location exposed to direct sunlight.
- When it becomes absolutely necessary to remove a Board from its conductive bag or case, always place it on its conductive mat in an area as free as possible from static electricity.
- Do not touch the pins of the ICs with your bare hands.

**During Replacement:**
- Before unplugging connectors from the P.W. Boards, make sure that the power cord has been unplugged from the outlet.
- When removing a Board from its conductive bag or conductive case, do not touch the pins of the ICs or the printed pattern. Place it in position by holding only the edges of the Board.
- Before plugging connectors into the Board, make sure that the power cord has been unplugged from the power outlet.

**During Inspection:**
- Avoid checking the IC directly with a multimeter; use connectors on the Board.
- Never create a closed circuit across IC pins with a metal tool.
- When it is absolutely necessary to touch the ICs and other electrical components on the PW Board, be sure to ground your body.

## 1-4. HANDLING OF THE IMAGING CARTRIDGE

**During Transportation/Storage:**
- Use the specified carton whenever moving or storing the Imaging Cartridge.
- The storage temperature is in the range between –20°C and +40°C.
- In summer, avoid leaving the Imaging Cartridge in a car for a long time.

**Handling:**
- Ensure that the correct Imaging Cartridge is used.
- Store the Imaging Cartridge in a site that is not exposed to direct sunlight.

**Precautionary Information on the PC Drum Inside the Imaging Cartridge:**
- The PC Drum exhibits greatest light fatigue after being exposed to strong light over an extended period of time. Never, therefore, expose it to direct sunlight.
- Use care not to contaminate the surface of the PC Drum with oil-base solvent, fingerprints, and other foreign matter.
- Do not scratch the surface of the PC Drum.
- Do not apply chemicals to the surface of the PC Drum.
- Do not attempt to wipe clean the surface of the PC Drum.

## 1-5. PARTS WHICH MUST NOT BE TOUCHED

### (1) Red painted Screws

**Purpose of Application of Red Paint**
Red painted screws show that the assembly or unit secured can only be adjusted or set at the factory and should not be readjusted, set, or removed in the field.

Note that when two or more screws are used on the part in questions, only one representative screw may be marked with red paint.

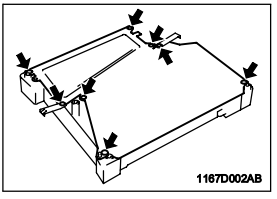
### (2) Variable Resistors on Board

Do not turn the variable resistors on boards for which no adjusting instructions are given in "ADJUSTMENT."

### (3) Other Screws

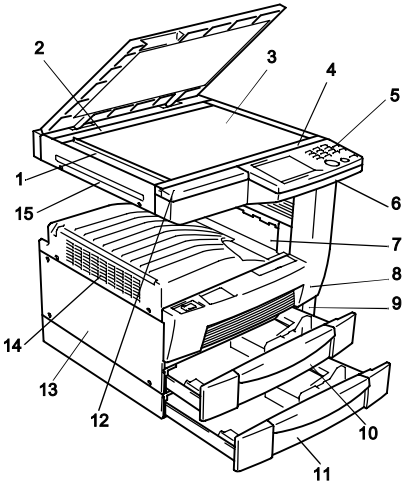
Although not marked with red paint, the following screws must not be loosened or readjusted.

8 screws on the PH Unit Cover

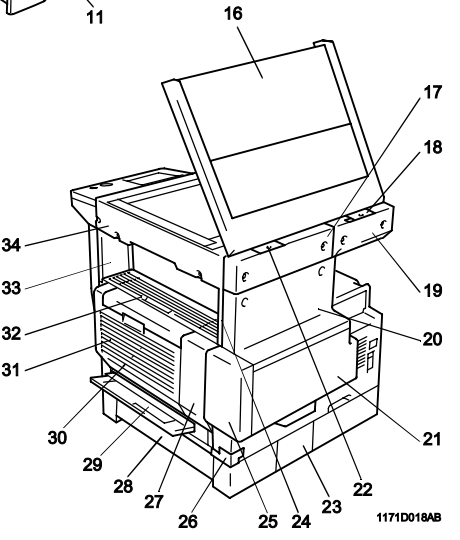


# 2 DISASSEMBLY/REASSEMBLY

## 2-1. DOORS, COVERS, AND EXTERIOR PARTS: IDENTIFICATION AND REMOVAL PROCEDURES




1171D017AA



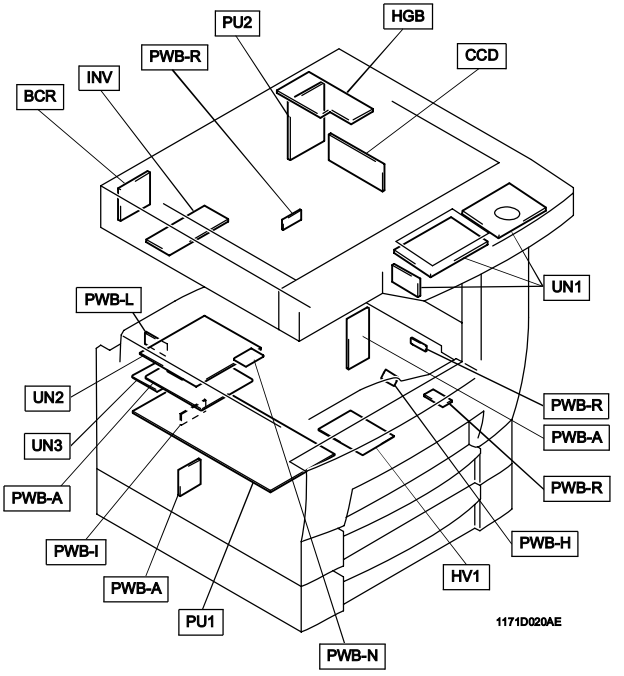

1171D018AB

| No. | Part Name | Removal Procedure |
|---|---|---|
| 1 | ADF Glass Assy. | Remove No. 2, 4. → Remove two holding brackets. → Remove two screw caps. → Remove two screws that secure the ADF Glass Assy. |
| 2 | Rear Holding Bracket | Remove No. 17, 18. → Remove two screw caps. → Remove two screws that secure the Rear Holding Bracket. |
| 3 | Original Glass | Remove No. 4. → Remove two holding brackets. |
| 4 | Front Holding Bracket | Remove two screw caps. → Remove two screws that secure the Front Holding Bracket. |
| 5 | Control Panel | Remove No. 8. → Remove No. 6. → Remove No. 4. → Remove No. 12. → Remove five screws that secure the control panel and unplug one connector. |
| 6 | Front Upper Cover | Remove No. 8. → Remove No. 12. → Remove six screws that secure the Front Upper Cover. |
| 7 | Exit Lower Cover | Remove No. 32. → Remove No. 24. → Unhook the two tabs of the Exit Lower Cover and remove the Exit Lower Cover. |
| 8 | Front Cover | Slide out No. 10. → Open No. 25. → Remove three screws that secure the Front Cover. |
| 9 | LED Cover | Slide out No. 10. → Remove one screw that secure the LED Cover. |
| 10 | MP Cassette | Slide out the MP Cassette. → Pushing the tab on the right rail, pull out the cassette. |
| 11 | 500-Sheet Cassette | Slide out the 500-Sheet Cassette. → Pushing the tabs on both the right and left rails, pull out the cassette. |
| 12 | Upper Front Left Cover | Remove No. 4. → Remove two screws that secure the Upper Front Left Cover. |
| 13 | Left Cover | Remove six screws that secure the Left Cover. |
| 14 | Upper Cover | Remove two screws that secure the Upper Cover. |
| 15 | Left IR Cover | Remove two screws that secure the Left IR Cover. |
| 16 | Original Cover | ——— |
| 17 | Rear Right IR Cover | Remove No. 22. → Remove No. 19. → Remove two screws that secure the Rear Right IR Cover. |
| 18 | Left Hinge Cover | Remove one screw that secure the Left Hinge Cover. |
| 19 | Rear Left IR Cover | Remove No. 17. → Remove two screws that secure the Rear Left IR Cover. |
| 20 | Rear Upper Cover | Remove No. 21. → Remove No. 17. → Remove No. 19. → Remove four screws that secure Rear Upper Cover. |
| 21 | Rear Lower Cover | Remove No. 26. → Remove No. 25. → Open No. 30. → Open No. 32. → Remove five screws that secure the Rear Lower Cover. |
| 22 | Right Hinge Cover | Remove one screw that secure the Right Hinge Cover. |
| 23 | Connector Cover | Remove one screw that secure the Connector Cover. |
| 24 | Rear Inside Cover | Remove No. 22. → Remove three screws that secure the Rear Inside Cover. |

| No. | Part Name | Removal Procedure |
|---|---|---|
| 25 | Toner Bottle Cover | Open the Toner Bottle Cover. → Unhook the dowels at four places of the Toner Bottle Cover. |
| 26 | Harness Cover | Remove one screw that secure the Harness Cover. |
| 27 | Duplex Unit Rear Cover | Remove No. 31. → Remove two screws that secure the Duplex Unit Rear Cover. |
| 28 | 500-Sheet Cassette Side Cover | Open the Side Cover. → Slide the Side Cover to the front and, at the same time, pull the rear side out of the frame. |
| 29 | Manual Bypass Tray | Remove No. 26. → Unplug one connector. → Remove three screws that secure the Manual Bypass Tray. |
| 30 | Side Cover | ——— |
| 31 | Duplex Unit | Remove two screws that secure the Duplex Unit. |
| 32 | Fusing Unit | See D-26. |
| 33 | Front Inside Cover | Remove No. 8. → Remove No. 32. → Remove two screws that secure the Front Inside Cover. |
| 34 | Right IR Cover | Remove three screws that secure the Right IR Cover. |

## 2-2. REMOVAL OF CIRCUIT BOARDS AND OTHER ELECTRICAL COMPOMENTS

- When removing a circuit board or other electrical component, refer to "PRECAUTIONS FOR HANDLING THE PWBs" contained in SWITCHES ON PWBs and follow the corresponding removal procedures.
- The removal procedures given in the following omit the removal of connectors and screws securing the circuit board support or circuit board.
- Where it is absolutely necessary to touch the ICs and other electrical components on the board, be sure to ground your body.

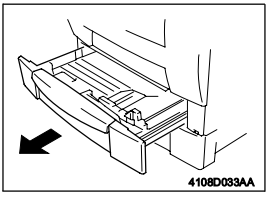


| Symbol | Part Name | Removal Procedure |
|---|---|---|
| PWB-A | Master Board | Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → Remove two screws and the MFB Box Assy. → PWB-A |
| PWB-A | Cassette Main Board | Remove the Connector Cover. → PWB-A |
| PWB-A | Duplex Main Board | Remove the Duplex Unit. → Remove the Duplex Unit Rear Cover. → PWB-A |
| PWB-H | Double Feed Detecting Board | Slide out the MP Cassette. → Remove one screw and the PWB-H Mounting Bracket Assy. → PWB-H |
| PWB-I | Paper Size Detecting Board | Remove the Harness Cover. → Remove the Rear Cover. → Remove two screws and the PW Board Cover. → PWB-I |
| PWB-L | PPM Switching Board | Remove the Harness Cover. → Remove the Rear Cover. → Remove one screw and the PWB-L Mounting Bracket Assy. → PWB-L |
| PWB-N | RAM Board | Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → PWB-N |
| PWB-R | Fuser Frame Register Board | Remove the Fusing Unit. → Remove the rear lamp cover. → PWB-R |
| PWB-R | Pre-Transfer Guide Plate Register Board 1 | Remove the Vertical Transport Unit. → Remove two screws and two ground plates. → PWB-R |
| PWB-R | Pre-Transfer Guide Plate Register Board 2 | Open the Side Cover. → Remove the Imaging Cartridge. → Remove one screw and the PW Board Cover. → PWB-R |
| PU1 | Power Supply Board 1 | Remove the Harness Cover. → Remove the Rear Cover. → Remove the Left Cover. → Remove five screws and the Reinforcement Bracket. → Remove three screws and the PU1 Mounting Bracket Assy. → PU1 |
| PU2 | Power Supply Board 2 | Remove the Harness Cover. → Remove the Rear Cover. → PU2 |
| HV1 | High Voltage Unit | Open the Side Cover. → Remove the Imaging Cartridge. → Remove two screws and the HV1 Cover. → HV1 |
| INV | Inverter Board | Remove the Original Glass. → INV |
| BCR | BCR Board | Remove the Rear Left IR Cover. → Remove three screws and the Harness Cover. → BCR |
| HGB | HGB Board | Remove the Original Glass. → Remove the Right IR Cover. → Remove the Optical Cover. → Remove the Rear Lower Cover. → Remove the Rear Upper Cover. → Remove the Shielding Plate. (U.S.A. and Canada only) → Remove one screw and the Harness Cover. → Unplug nine connectors. → Remove five screws and the HGB Mounting Bracket Assy. → HGB |
| CCD | CCD Board | See D-15. |

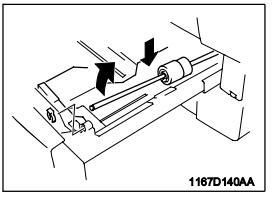
| Symbol | Part Name | Removal Procedure |
|---|---|---|
| UN2 | MFB Board | Remove the Upper Cover. → Remove nine screws and the MFB Box Cover. → UN2 |
| UN3 | Polygon Motor Drive Board | Remove the PH Unit. → UN3 |

## 2-3. PAPER TAKE-UP/TRANSPORT SECTION

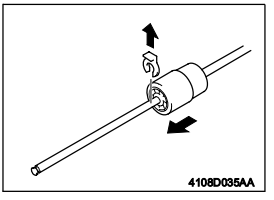
### (1) Replacement of the Paper Take-Up Roll




1. Slide out the MP Cassette.

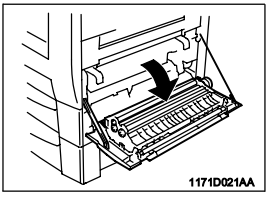



2. Lock the Paper Lifting Plate.
3. Snap off one C-clip of the Paper Take-Up Roll Assy.
4. Slide the Paper Take-Up Roll Assy to the rear so that it can be pulled off the bushing at the front.

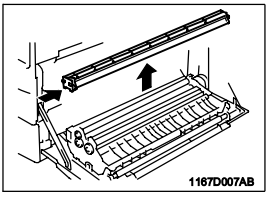



5. Snap off one C-clip and remove and replace the Paper Take-Up Roll.

### (2) Replacement of the Paper Dust Remover

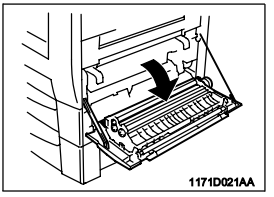



1. Open the Side Cover.

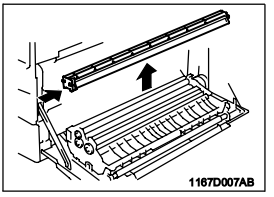



2. Remove the Paper Dust Remover and replace it.

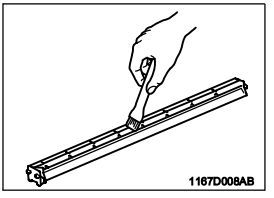
### (3) Cleaning of the Paper Dust Remover




1. Open the Side Cover.

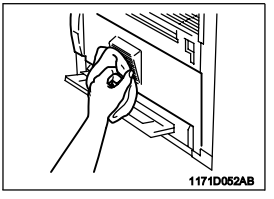



2. Remove the Paper Dust Remover.



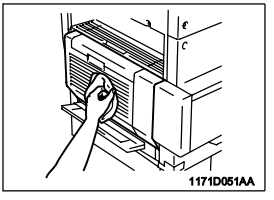

3. Using a brush, whisk dust and dirt off the Paper Dust Remover.

### (4) Cleaning of the Side Cover




Using a soft cloth dampened with alcohol, wipe the Side Cover.

### (5) Cleaning of the Duplex Unit Cover

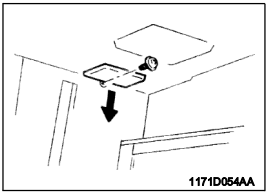



Using a soft cloth dampened with alcohol, wipe the Duplex Unit Cover.

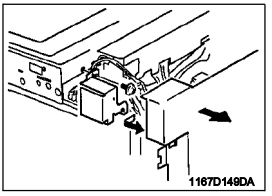
## 2-4. OPTICAL SECTION

**(1) Removal of the IR Unit**

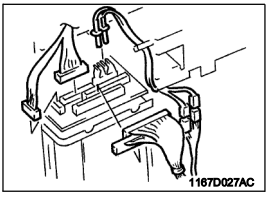
1. Remove the Original Cover, Front Holding Bracket, Upper Front Left Cover, Front Cover, Front Upper Cover, Rear Right IR Cover, Rear Left IR Cover, Rear Lower Cover, Rear Upper Cover, and Front Inside Cover.



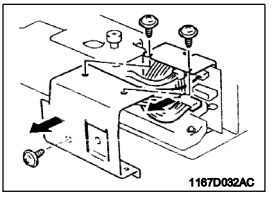

2. Remove one screw and the Motor Cover.



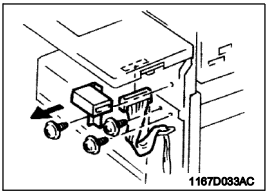

3. Remove the Shielding Plate. (U.S.A. and Canada only)
4. Remove one screw and the Harness Cover.



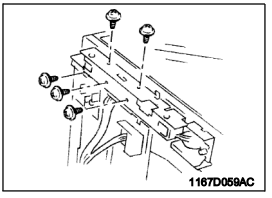

5. Unplug eight connectors of the HGB Board.



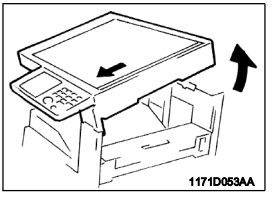

6. Remove three screws and the Harness Cover.
7. Unplug one connector of the BCR Board.




8. Remove one screw and the Total Counter Mounting Bracket Assy.
9. Unplug one connector of the Control Panel.
10. Remove two screws that secure the front end of the frame.




11. Remove five screws that secure the rear end of the frame.




12. Raise the rear end of the IR Unit and pull the unit out toward front.

**(2) Removal of the PH Unit**

---

*NOTES*

- *Do not place the PH Unit upside down or subject it to excessive shock.*
- *Replace the PH Unit as one unit.*
- *NEVER attempt to disassemble or adjust the PH Unit.*
- *Whenever the PH Unit has been removed, make the following adjustments: Edge Erase, Registration (CD, FD) (Printer), Registration (IR).*

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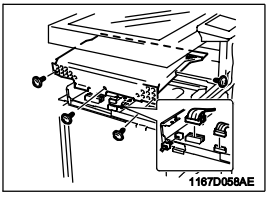
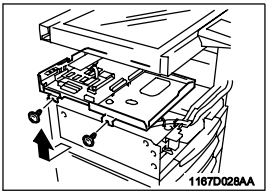
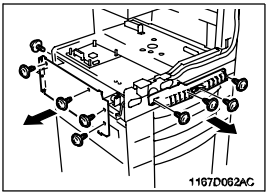


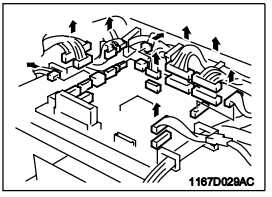

1. Remove the Upper Cover, Front Cover, Left Cover, and Rear Cover.
2. Remove four screws and the MFB Box Cover.
3. Unplug five connectors of the MFB Board.



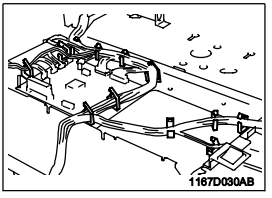

4. Remove two screws and the MFB Box Assy.



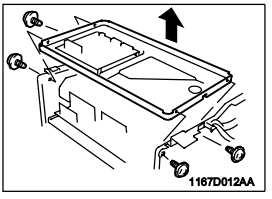

5. Remove five screws and the Reinforcement Bracket.
6. Remove four screws and the handle.




7. Unplug all connectors (13) from Master Board PWB-A.

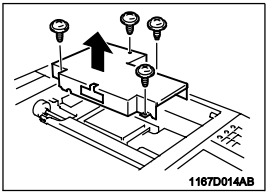



8. Remove the harness from all cord clamps (12) on the PH Base Plate.

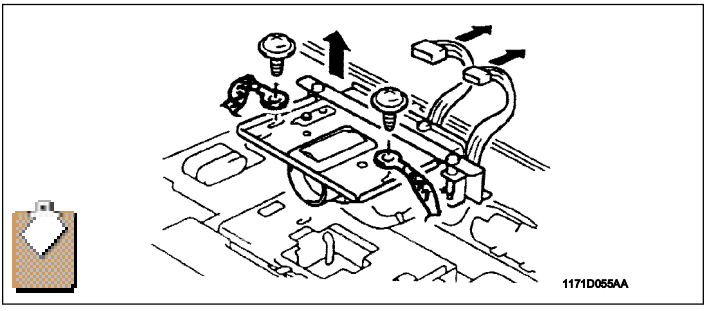



9. Remove four screws and the PH Unit.

### (3) Removal of the CCD Unit



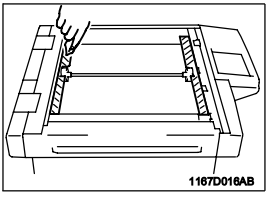

1. Remove the Original Glass.
2. Remove four screws and the Cover.
3. Unplug two connectors of the CCD Unit.
4. Remove two screws and the CCD Unit.




*NOTES*

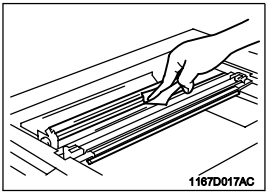
1. When removing the CCD Unit, remove only those screws and parts that are specified. (Remove the CCD Unit as one unit.)
2. Whenever the CCD Unit has been replaced, make the following adjustment: FD of Zoom Adjust (IR).

### (4) Cleaning of the Scanner Rails/Bushings



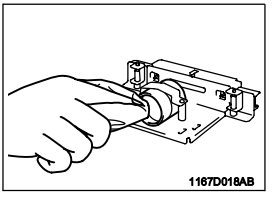

1. Remove the Original Glass.
2. Using a soft cloth, wipe clean the Scanner Rails and Bushings.

**(5) Cleaning of the Mirrors**



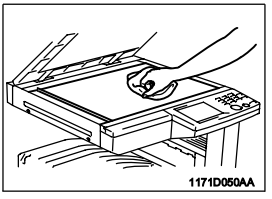

1. Remove the Original Glass.
2. Wipe clean the Mirrors with a soft cloth.

**(6) Cleaning of the Lens**




1. Remove the CCD Unit.
2. Wipe clean the Lens with a soft cloth.

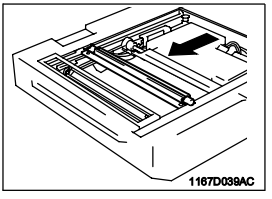
**(7) Cleaning of the Original Glass**



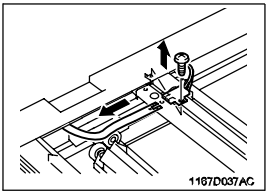

Wipe clean the Original Glass with a soft cloth.

**(8) Removal of the Scanner**

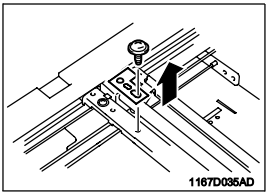
1. Remove the Original Glass.
2. Remove the Rear Holding Bracket.



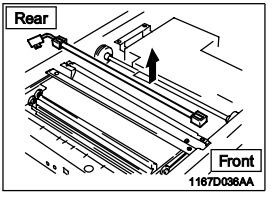

3. Slide the Scanner to the position shown.



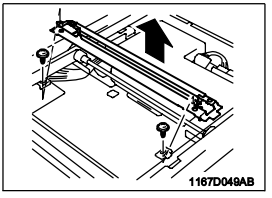

4. Remove one screw and unplug the connector of the Exposure Lamp.
5. Remove the flat cable of the Exposure Lamp.




6. Remove one screw and the Lamp Fixing Bracket.



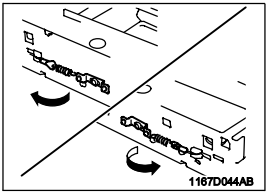

7. Slide the Exposure Lamp to the front and remove it.



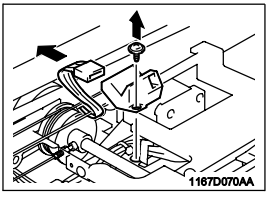

8. Remove two screws and the Scanner.

**(9) Removal of the Scanner Drive Cables**

1. Remove the Original Glass and ADF Glass Assy.
2. Remove the Left IR Cover.
3. Remove the Scanner.

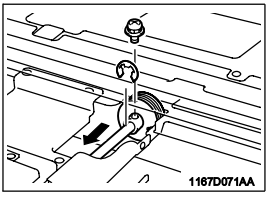



4. Unhook the spring of the cable on the hook side, one each at the front and in the rear.

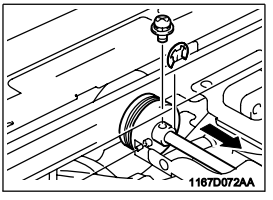



5. Remove one screw and the Original Size Detection Sensor.

✱ Inch Areas Option.



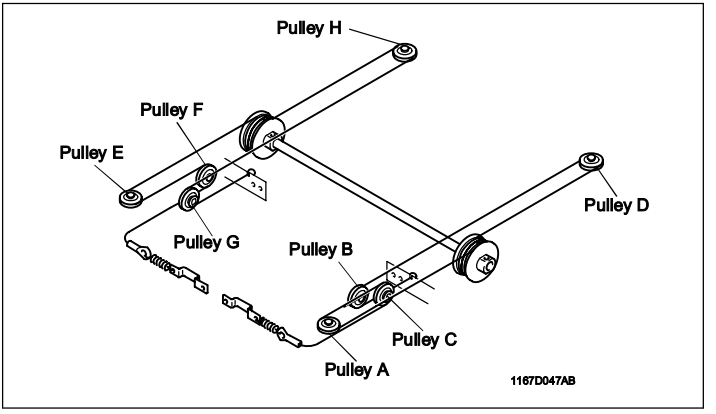

6. Snap off one E-ring and remove one mounting screw from the front pulley and slide the pulley to the rear.

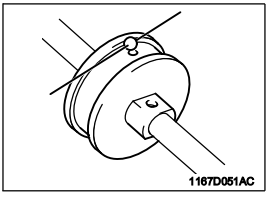



7. Snap off one E-ring and remove one mounting screw from the rear pulley and slide the pulley to the front.

8. Remove the Scanner Drive Cable, hook end first.

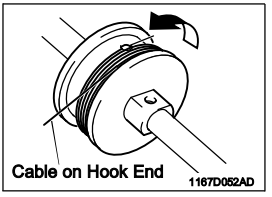
**(10) Winding of the Scanner Drive Cables**



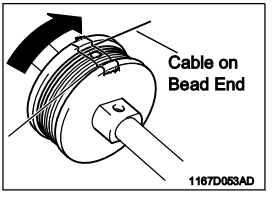




Front

1. Position the round bead of the Scanner Drive Cable in the pulley as shown.

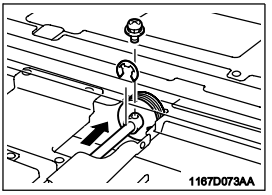



2. Wind the hook end of the Scanner Drive Cable two turns counterclockwise from the rear side to the front.

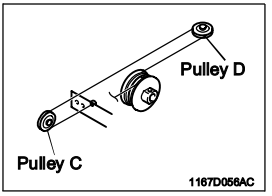



3. Wind the bead end of the cable four turns clockwise from the front to the rear. Then, secure the cable with tape.

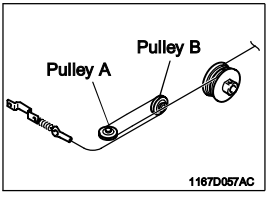
*NOTE*
*Make sure that no part of the cable rides on the other.*



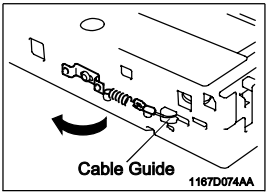

4. Slide the pulley to the front and install one mounting screw and one E-ring.



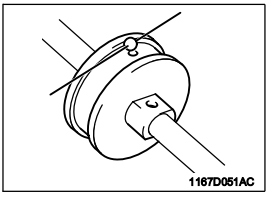

5. Wind the bead end of the cable around pulley D and pulley C, then hook the bead onto the Adjustable Anchor.




6. Wind the hook end of the cable around pulley A and pulley B.

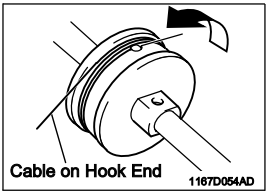



7. Fit the hook end of the cable into the groove in the Cable Guide and hook the spring.

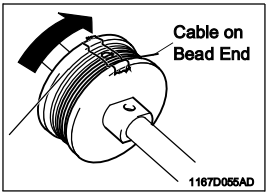



Rear

8. Position the round bead of the Scanner Drive Cable in the pulley as shown.

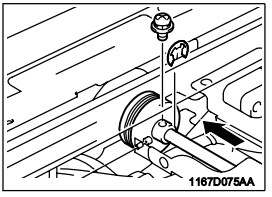



9. Wind the hook end of the cable two turns counter-clockwise from the front to the rear.

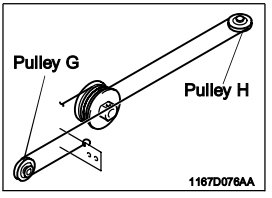



10. Wind the bead end of the cable four turns clock-wise from the rear to the front. Then, secure the cable with tape.

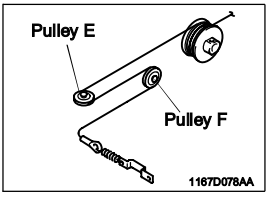
*NOTE*
*Make sure that no part of the cable rides on the other.*



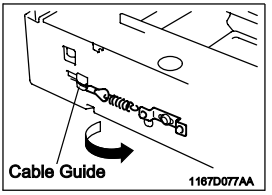

11. Slide the pulley toward the rear and install one mounting screw and one E-ring.




12. Wind the bead end of the cable around pulley H and pulley G and hook the bead onto the Adjust-able Anchor.




13. Wind the hook end of the cable around pulley E and pulley F.




14. Fit the hook end of the cable into the groove in the Cable Guide and hook the spring.

15. Peel off the tape from the pulleys at the front and rear.
16. Mount the Scanner.
17. Mount the Original Size Detection Sensor.
18. Reinstall the Left IR Cover.
19. Reinstall the Original Glass and ADF Glass Assy.
20. Perform the Focus-Positioning of the Scanner and 2nd/3rd Mirrors Carriage.
    (For details, see ADJUSTMENT.)

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***NOTE***

*Whenever the Scanner Drive Cables have been removed, be sure to make the following adjustment: CD of Zoom Adjust (IR).*

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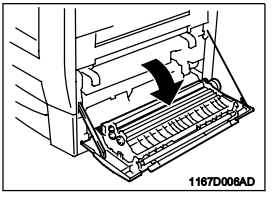
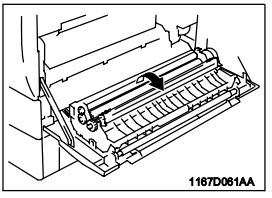
## 2-5. IMAGE TRANSFER SECTION

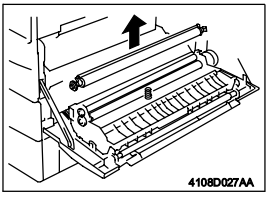
### (1) Removal of the Image Transfer Roller




1. Open the Side Cover.



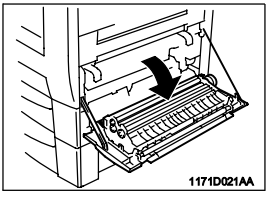

2. Raise the Image Transfer Guide Plate.



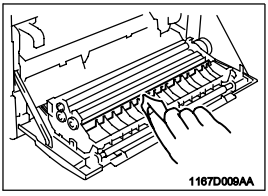

3. Remove the Image Transfer Roller and replace it.

*NOTE*
*Do not touch the surface of the Image Transfer Roller directly with bare hands.*

### (2) Cleaning of the Comb Electrode



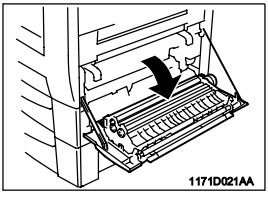

1. Open the Side Cover.



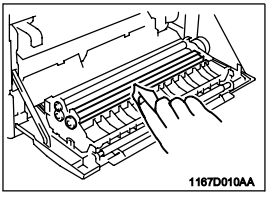

2. **Using a soft cloth dampened with alcohol, wipe the Comb Electrode.**

***NOTES***
- *Make sure the alcohol does not touch the surface of the Image Transfer Roller.*
- *When wiping the Comb Electrode, make sure the cloth is not caught by the ends of the combs.*

**(3) Cleaning of the Pre-Image Transfer Guide Plate**



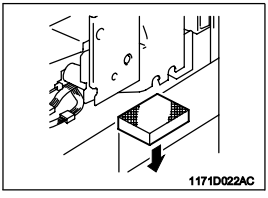

1. **Open the Side Cover.**




2. **Using a soft cloth dampened with alcohol, wipe the Pre-Image Transfer Guide Plate.**

***NOTE***
*Make sure the alcohol does not touch the surface of the Image Transfer Roller.*

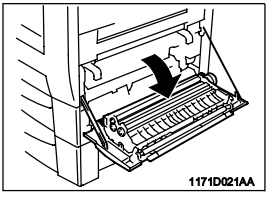
**(4) Replacement of the Ozone Filter**



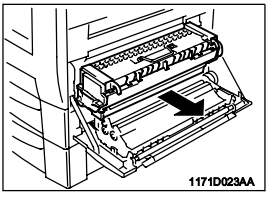

1. **Remove the Rear Lower Cover.**
2. **Pull out the Ozone Filter and replace it.**

## 2-6. DEVELOPING SECTION

### (1) Removal of the Imaging Cartridge




1. Open the Side Cover.




2. Holding onto the green handles, slide the Imaging Cartridge part of the way out.
3. Then grasp the handle on top of the cartridge and pull the cartridge out.

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*NOTE*

*When installing the Imaging Cartridge, push it all the way into the machine.*
*If the cartridge is not properly installed, the PC Drum protective shutter of the cartridge may not be opened or may even be damaged.*

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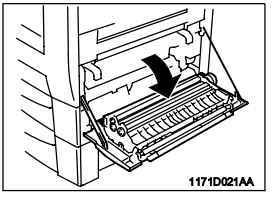
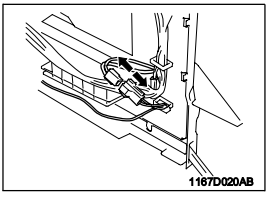
## 2-7. FUSING SECTION

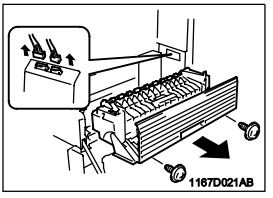
### (1) Removal of the Fusing Unit




1. Open the Side Cover.

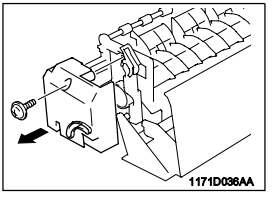



2. Remove the Front Cover.
3. Unplug one connector at the front.

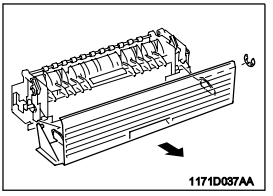



4. Open the Exit Cover and unplug two connectors in the rear.
5. Close the Exit Cover and remove two screws and the Fusing Unit.

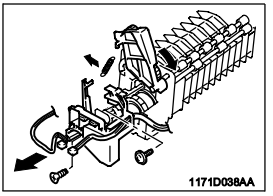
### (2) Removal of the Fusing Roller Heater Lamp, Fusing Right Roller, Fusing Left Roller, Fusing Roller Thermistor, Fusing Roller Thermostat, and Fusing Roller Heater Lamp Fuse



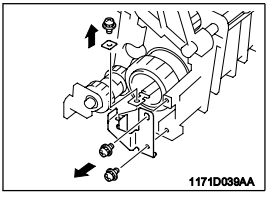

1. Open the Exit Cover.
2. Remove one screw and the Fusing Front Cover.



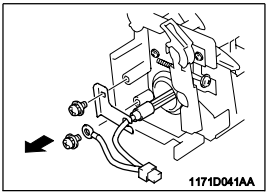

3. Snap off one E-ring and remove the Exit Cover.



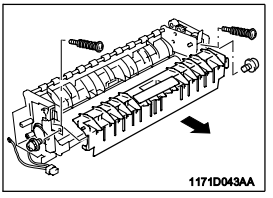

4. Unhook one spring to free the Idle Lever.
5. Remove two harnesses.
6. Remove two screws and the Rear Cover.



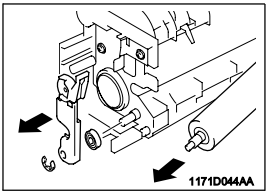

7. Remove three screws and the rear Lamp Holder.



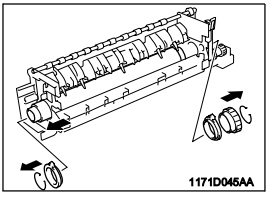

8. Remove one screw and the front Lamp Holder.
9. Remove one screw and the Fusing Roller Heater Lamp.



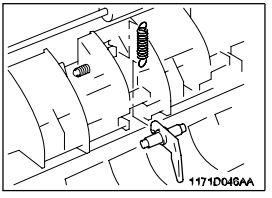

10. Remove two screws and the Fusing Rear Guide Assy.
11. Remove two pressure springs.




12. Snap off one E-ring and remove the front Misfeed Clearing Lever Assy and bearing.
13. Remove the Fusing Right Roller.

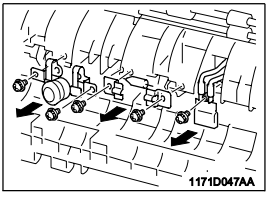



14. Snap off two retaining rings.
15. Remove one gear and two bushings.
16. Remove the Fusing Left Roller.




***NOTE***

*When the Fusing Left Roller is removed, it can cause the spring to come off the Separator Finger. After the Fusing Left Roller has later been reinstalled, be sure to hook the spring onto the Separator Finger.*

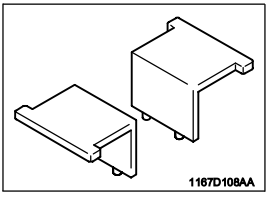



17. Remove one screw and the Fusing Roller Thermistor.
18. Remove two screws and the Fusing Roller Heater Lamp Fuse.
19. Remove two screws and the Fusing Roller Thermostat.

# 3 ADJUSTMENT

## 3-1. ADJUSTMENT JIGS AND TOOLS USED

1. Scanner/Mirrors Carriage Positioning Jigs

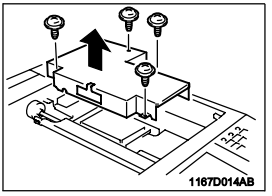



## 3-2. ADJUSTMENT REQUIREMENT LIST

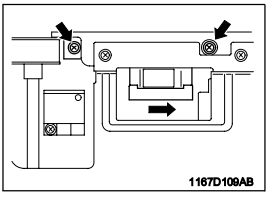
| Adjustment Item | Requirements | Adjustment Point | Ref. Page |
|---|---|---|---|
| Touch Panel Adj. | Automatically adjusted | Control Panel | D-32 |
| Original Size Detecting Sensor Adjustment | ↑ | ↑ | D-33 |
| Loop Adjustment | — | ↑ | D-34 |
| Edge Erase | | | |
| Leading | — | ↑ | D-35 |
| Trailing | — | ↑ | D-36 |
| Right/Left | — | ↑ | D-37 |
| Registration (CD) (Printer) | 10 ± 2.0 mm | ↑ | D-38 |
| Registration (FD) (Printer) | ↑ | ↑ | D-40 |
| Registration (IR) | | | |
| CD | ↑ | ↑ | D-42 |
| FD | ↑ | ↑ | D-44 |
| Zoom Adjust (IR) | | | |
| CD | 200 ±1.0 mm | ↑ | D-46 |
| FD | 300 ±1.5 mm | ↑ | D-48 |
| IR-Erasure Width | — | ↑ | D-50 |

## 3-3. ADJUSTMENT OF BELT TENSION

- Adjustment of the Scanner Motor Timing Belt




1. Remove the Original Glass.
2. Remove four screws and the Cover.




3. Loosen the two screws that secure the Scanner Motor. Using a bar tension gage, pull the motor to the right with a tension of 1000 g ±50 g and, at the same time, tighten the mounting screws.

*NOTE*

*After the adjustment, turn the timing belt to check that the belt teeth are in mesh with the pulley grooves.*

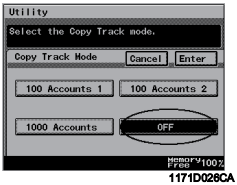
## 3-4. TEST PRINT

***NOTES***

*This function is used to make the following electrical and image adjustments:*

- *Registration (CD) (Printer)*
- *Registration (FD) (Printer)*
- *Registration (IR)*
- *Zoom Adjust (IR)*

### ◎ Adjustment Procedure

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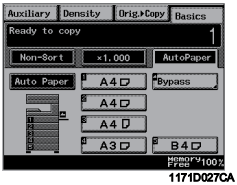
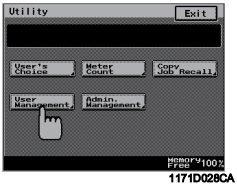
1. Check that "Copy Track Mode" of "Copy Track" under "Admin. Management" available from "Utility" is "OFF."



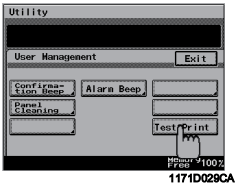

1171D027CA

2. Select the paper source for the test print.




1171D028CA

3. Press the Utility key on the control panel and touch [User Management].




1171D029CA

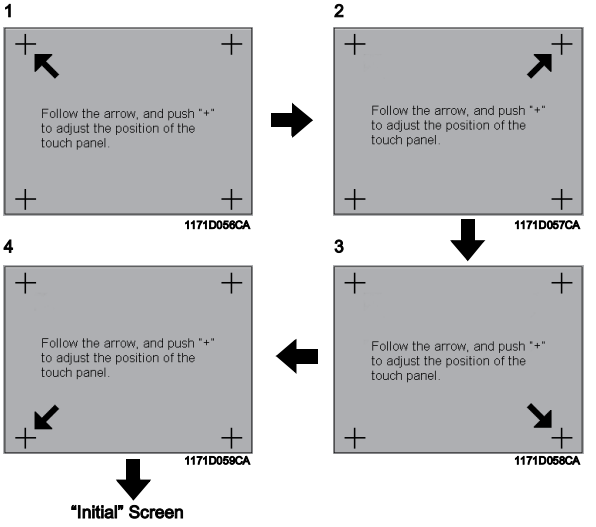
4. Touch [Test Print] to produce a test pattern.

## 3-5. ELECTRICAL/IMAGE ADJUSTMENT

### (1) Touch Panel Adj.

*NOTE*
*Make this adjustment after either of the following procedures have been performed:*
- *Memory Clear*
- *Control Panel replacement*

◎ **Adjustment Procedure**
1. **Call the Initial mode to the screen. (For details, see SWITCHES ON PWBs, TECH. REP. SETTINGS.)**
2. **Touch [Touch Panel Adj.].**


1
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D056CA
2
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D057CA
3
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D058CA
4
Follow the arrow, and push "+" to adjust the position of the touch panel.
1171D059CA
"Initial" Screen

3. **Touch + on screen 1.**

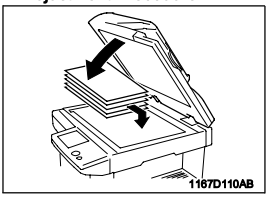
*NOTE*
*At this time, ensure that the very center of "+" is touched using the tip of a ballpoint pen or similar device.*

4. **Touch + on screen 2.**
5. **Touch + on screen 3.**
6. **Touch + on screen 4.**

### (2) Original Size Detecting Sensor Adjustment (F7-1)

*NOTE*
*Make this adjustment after any of the following procedures have been performed:*
- *Memory Clear*
- *A faulty original size detection occurs*
- *Replacement of the CCD Unit and Scanner parts (including the Exposure Lamp)*
- *RAM Board replacement*

◎ **Adjustment Procedure**




1. **Stack five sheets of blank A3 or 11" × 17" paper on the Original Glass and lower the Original Cover.**
2. **Call the Tech. Rep. mode to the screen.**
3. **Touch [Function] to call the Function menu.**
4. **Touch F7-1 Original Size Detecting Sensor Adjustment.**
5. **Press the Start key to run the Original Size Detecting Sensor Adjustment function.**

*NOTE*
*The Start key remains lit up orange while this function is being run and lights up green as soon as the sequence is completed.*

### (3) Loop Adjustment

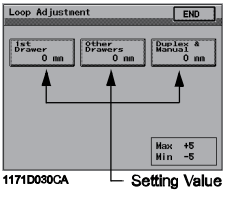
**Requirement**
Adjust so that a correct loop is formed before the Synchronizing Rollers when paper is fed through.

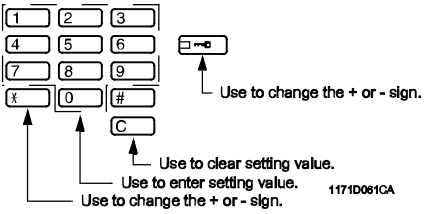
| Adjust Mode | Setting Value |
|---|---|
| Loop Adjustment | -5 to +5 |

*NOTE*
*This adjustment is to be made when any of the following symptoms occurs: variations in the amount of print leading edge void, paper skew, and misfeed.*

◎ Adjustment Procedure
1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Loop Adjustment] to enter the Loop Adjustment mode.
4. Select the paper source for which the adjustment is to be made.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**
Change the setting value as necessary until there are no variations in the amount of void image along the leading edge, skewed feeding, dog-ear, or misfeed.





1 2 3
4 5 6
7 8 9
* 0 #
C
Use to change the + or - sign.
Use to clear setting value.
Use to enter setting value.
Use to change the + or - sign.
1171D061CA

7. Touch the [END] key to validate the setting value.

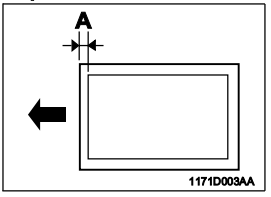
**Caution**
Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

8. Perform the same steps to adjust for the other paper sources.

### (4) Edge Erase

1. Leading

**Requirement**




Adjust so that the erase width on the leading edge falls within the range of 0 to 5 mm.

| Adjust Mode | Setting Range |
|---|---|
| Edge Erase/Leading | 0 to 5 |

*NOTE*

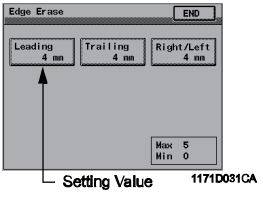
*This adjustment must be made when the PH Unit has been replaced and after Registration (CD/FD) (Printer) has been made.*

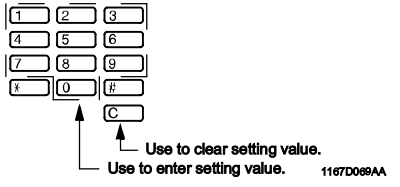
© Adjustment Procedure

1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Leading] to enter the Leading Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**

To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.



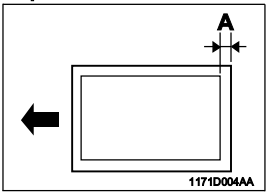

6. Touch the [END] key to validate the setting value.

**Caution**

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. Trailing

**Requirement**



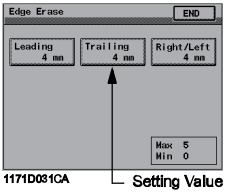

Adjust so that the erase width on the trailing edge falls within the range of 0 to 5 mm.

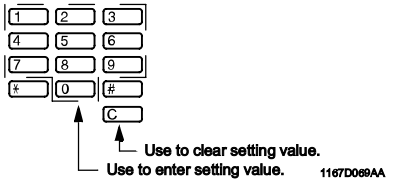
| Adjust Mode | Setting Range |
|---|---|
| Edge Erase/Trailing | 0 to 5 |

*NOTE*
*This adjustment must be made when the PH Unit has been replaced and after Registration (CD/FD) (Printer) has been made.*

◎ Adjustment Procedure
1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Trailing] to enter the Trailing Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**
To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.



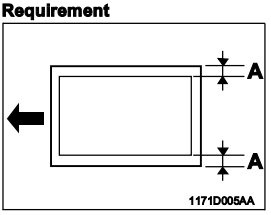




6. Touch the [END] key to validate the setting value.

**Caution**
Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

3. Right/Left

**Requirement**



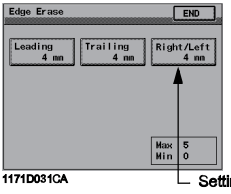

Adjust so that the erase width on the right/left edge falls within the range of 0 to 5 mm.

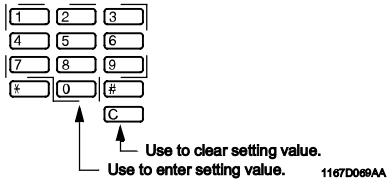
| Adjust Mode | Setting Range |
|---|---|
| Edge Erase/Right/Left | 0 to 5 |

*NOTE*
*This adjustment must be made when the PH Unit has been replaced and after Registration (CD) (Printer) have been made.*

◎ Adjustment Procedure
1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice], then [Printer].
3. Touch [Edge Erase] and then [Right/Left] to enter the Right/Left Edge Erase adjustment mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**
To make the edge erase width smaller, decrease the setting value.
To make the edge erase width greater, increase the setting value.



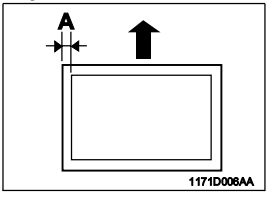




6. Touch the [END] key to validate the setting value.

**Caution**
Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

### (5) Registration (CD) (Printer)

**Requirement**




Adjust so that width A on the test pattern output falls within the following range.

| Specification | Adjust Mode | Setting Range |
|---|---|---|
| 1-Sided: 10 ±2.0 mm<br>2-Sided: 10 ±3.0 mm | Registration (CD) | -4.0 to +4.0 |

*NOTE*
*This adjustment must be made when the PH Unit has been replaced and, for 2-sided, after Registration (CD) (Printer) for each paper source for 1-sided and Registration (FD) (Printer) have been made.*

◎ Adjustment Procedure
1. Produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. 1-Sided: Check to see if width A on the test pattern meets the specifications.
   2-Sided: Using the test pattern output as the original, make an ordinary 2-sided copy. Check to see if width A on the second side of the 2-sided copy meets the specifications.

   If width A falls outside the specified range, perform these steps to make the adjustment.

3. Call the Adjust mode to the screen.
4. Touch [Printer] and [Registration (CD)], in that order.
5. Select the paper source for which the adjustment is to be made.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

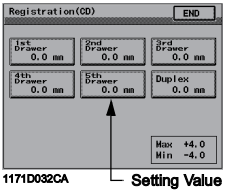
---

**Setting Instructions**

If width A is wider than specifications, make the setting value smaller than the current one.
If width A is narrower than specifications, make the setting value greater than the current one.

✱ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.

---



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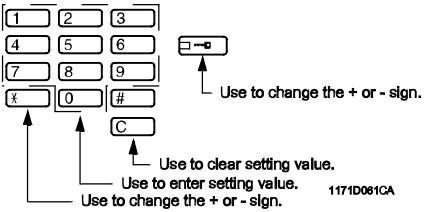

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8. Touch the [END] key to validate the setting value.

---

**Caution**

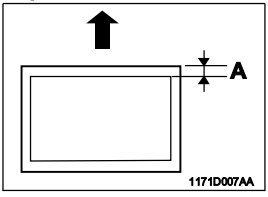
Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

---

9. Perform the same steps to adjust for the other paper sources.

### (6) Registration (FD) (Printer)

**Requirement**




Adjust so that width A on the test pattern output falls within the following range.

| Specification | Adjust Mode | Setting Range |
|---|---|---|
| 10 ±2.0 mm | Registration (FD) | -19 to +19 |

*NOTE*
*This adjustment must be made when the PH Unit has been replaced and after Registration (CD) (Printer) has been made.*

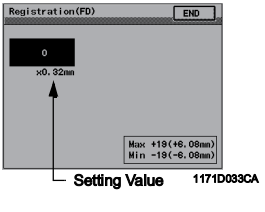
◎ Adjustment Procedure
1. Produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Check to see if width A on the test pattern meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

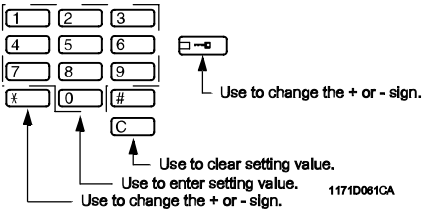
3. Call the Adjust mode to the screen.
4. Touch [Printer] and [Registration (FD)], in that order.
5. Select the paper source for which the adjustment is to be made.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**

If width A is wider than specifications, make the setting value smaller than the current one.
If width A is narrower than specifications, make the setting value greater than the current one.

✱ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.




8. Touch the [END] key to validate the setting value.

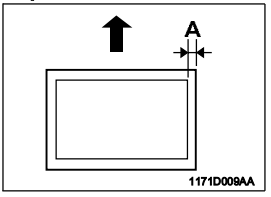
**Caution**

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

### (7) Registration (IR)

1. CD

**Requirement**




Place the test pattern output after the adjustments of Registration (CD and FD) (Printer) have been completed on the Original Glass and make a copy of it. Adjust so that width A on the test pattern copy falls within the following range.

| Specification | Adjust Mode | Setting Range |
|---|---|---|
| 10 ±2.0 mm | Registration (CD) | -127 to +127 |

*NOTE*

*This adjustment must be made when the PH Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) and CD of Zoom Adjust (IR) have been made.*

© Adjustment Procedure

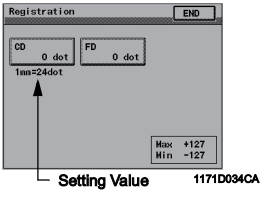
1. After the adjustments of Registration (CD and FD) (Printer) and CD of Zoom Adjust (IR) have been completed, produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Place the test pattern output on the Original Glass and make a copy of it.
3. Check to see if width A on the test pattern copy meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

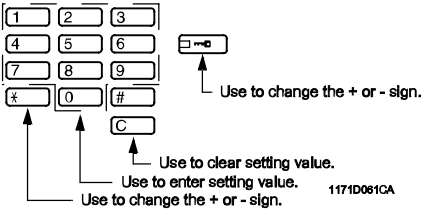
4. Call the Adjust mode to the screen.
5. Touch [IR], [Registration], and [CD], in that order.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**

If width A is wider than specifications, make the setting value smaller than the current one.
If width A is narrower than specifications, make the setting value greater than the current one.

* If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.



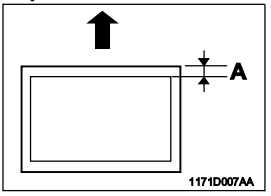

8. Touch the [END] key to validate the setting value.

**Caution**

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. FD

**Requirement**




Place the test pattern output after the adjustments of Registration (CD and FD) (Printer) have been completed on the Original Glass and make a copy of it. Adjust so that width A on the test pattern copy falls within the following range.

| Specification | Adjust Mode | Setting Range |
|---|---|---|
| 10 ±2.0 mm | Registration (FD) | -127 to +127 |

*NOTE*
*This adjustment must be made when the PH Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) and FD of Zoom Adjust (IR) have been made.*

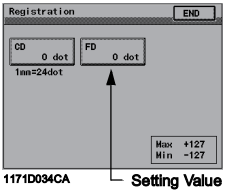
◎ Adjustment Procedure
1. After the adjustments of Registration (CD and FD) (Printer) and FD of Zoom Adjust (IR) have been completed, produce a test pattern. (For details, see 3-4. TEST PRINT.)
2. Place the test pattern output on the Original Glass and make a copy of it.
3. Check to see if width A on the test pattern copy meets the specifications.
   If width A falls outside the specified range, perform these steps to make the adjustment.

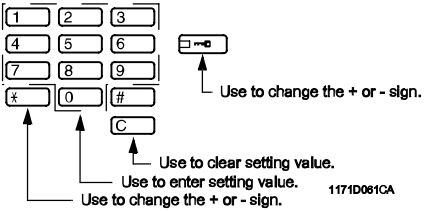
4. Call the Adjust mode to the screen.
5. Touch [IR], [Registration], and [FD], in that order.
6. Press the Clear key to clear the current setting.
7. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**

If width A is wider than specifications, make the setting value smaller than the current one.
If width A is narrower than specifications, make the setting value greater than the current one.

✱ If a single adjustment procedure does not successfully bring width A into the specified range, try another setting value.




8. Touch the [END] key to validate the setting value.

**Caution**

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

### (8) Zoom Adjust (IR)

1. CD

**Requirement**

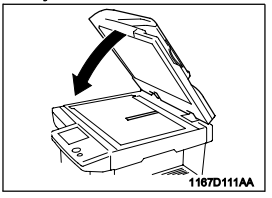
1. The difference should be within ±1.0% of the actual length.
2. Adjust so that the following specifications are satisfied with a scale length of 300 mm.

| Zoom Ratio | Specification | Adjust Mode | Setting Range |
|---|---|---|---|
| Full size (×1.000) | 300 ±3.0 mm | Zoom Adjust (CD) | 0.990 to 1.010 |

*NOTE*

*This adjustment must be made when the Scanner Drive Cables have been replaced and after the adjustments of Registration (CD and FD) (Printer) have been made.*

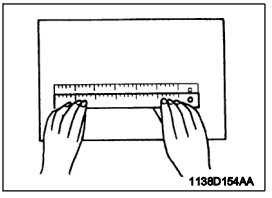
© Adjustment Procedure




1. Place a scale in parallel with the Original Width Scale and make a copy. (Note that the scale is perpendicular to the Original Length Scale.)

✱ Use the full size (×1.000) mode and A3 or 11" × 17" paper.

✱ If the scale is of plastic and transparent, place a blank sheet of paper over it.




2. Measure the length of the scale on the copy to find the difference.

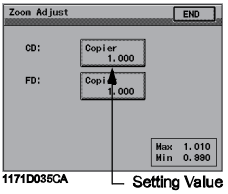
✱ If the difference is outside the specification, adjust by following the procedure shown below.

3. Call the Adjust mode to the screen.
4. Touch [IR], [Zoom Adjust], and [CD], in that order.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

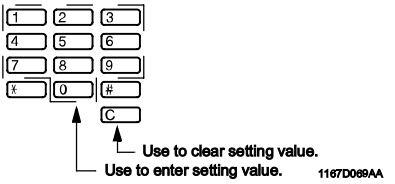
**Setting Instructions**

If the scale on the copy is longer than the actual scale, decrease the setting value.
If the scale on the copy is shorter than the actual scale, increase the setting value.

* If the measurement does not fall within the specifications through one setting, try another setting.



1171D035CA



1167D069AA

7. Touch the [END] key to validate the setting value.

**Caution**

Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

2. FD

**Requirement**

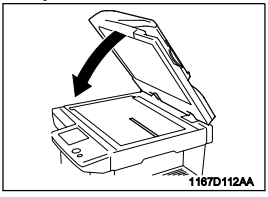
1. The difference should be within ±1.0% of the actual length.
2. Adjust so that the following specifications are satisfied with a scale length of 200 mm.

| Zoom Ratio | Specification | Adjust Mode | Setting Range |
|---|---|---|---|
| Full size (×1.000) | 200 ±2.0 mm | Zoom Adjust (FD) | 0.990 to 1.010 |

*NOTE*

*This adjustment must be made when the CCD Unit has been replaced and after the adjustments of Registration (CD and FD) (Printer) have been made.*

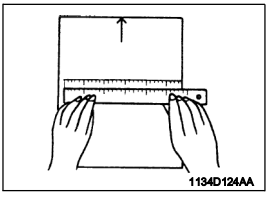
◎ Adjustment Procedure




1. Place a scale in parallel with the Original Length Scale and make a copy.

✱ Use the full size (X1.000) mode and paper with a width of 200 mm or more.

✱ If the scale is of plastic and transparent, place a blank sheet of paper over it.




2. Measure the length of the scale on the copy to find the difference.

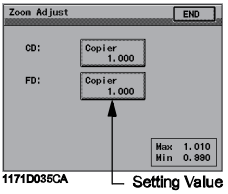
✱ If the difference is outside the specification, adjust by following the procedure shown below.

3. Call the Adjust mode to the screen.
4. Touch [IR], [Zoom Adjust], and [FD], in that order.
5. Press the Clear key to clear the current setting.
6. Enter the new setting value from the 10-Key Pad.

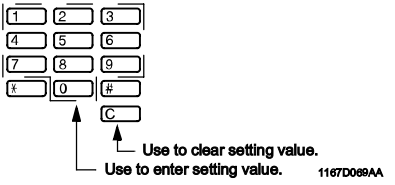
**Setting Instructions**

If the scale on the copy is longer than the actual scale, decrease the setting value.
If the scale on the copy is shorter than the actual scale, increase the setting value.

* If the measurement does not fall within the specifications through one setting, try another setting.



1171D035CA



1167D069AA

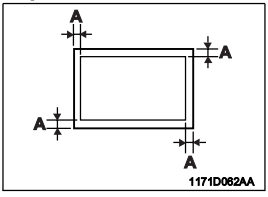
7. Touch the [END] key to validate the setting value.

**Caution**

Be sure to touch the END key before returning to normal operating mode. If the Panel Reset Key is used, the previous setting remains valid.

### (9) IR-Erasure Width

**Requirement**



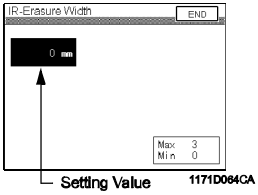

Set so that the erase width along four edges of the paper falls within the range of 0 to 3 mm.

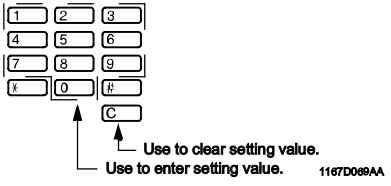
| Adjust Mode | Setting Range |
|---|---|
| IR-Erasure Width | 0 to 3 |

*NOTE*
*This adjustment must be made when a shadow is produced from the Original Scale.*

© Adjustment Procedure
1. Call the Tech. Rep. mode to the screen.
2. Touch [Tech. Rep. Choice].
3. Touch [IR-Erasure Width] to enter the IR-Erasure Width mode.
4. Press the Clear key to clear the current setting.
5. Enter the new setting value from the 10-Key Pad.

**Setting Instructions**
To make the erase width along four edges of the paper smaller, decrease the setting value.
To make the erase width along four edges of the paper greater, increase the setting value.




6. Touch the [END] key to validate the setting value.

**Caution**
Be sure to touch the END key before returning to normal operation mode. If the Panel Reset Key is used, the previous setting remains valid.

## 3-6. OTHER ADJUSTMENTS

- Focus-Positioning of the Scanner and 2nd/3rd Mirrors Carriage

*NOTE*

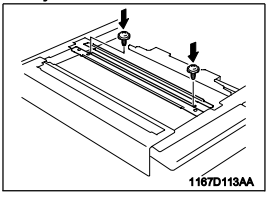
*Make this adjustment after any of the following procedures has been performed:*

- *After the Scanner Drive Cable has been replaced.*
- *When the Scanner Fixing Bracket has been removed from the Scanner Drive Cable.*
- *When the Scanner Drive Cable comes unwound.*

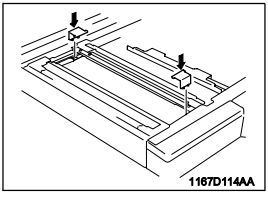
**Requirement**

**With the Scanner fixed to the Scanner Drive Cables, there should be no gap between the Scanner/Mirrors Carriage Positioning Jig and the Scanner and also between the Scanner/ Mirrors Carriage Positioning Jig and the 2nd/3rd Mirrors Carriage.**

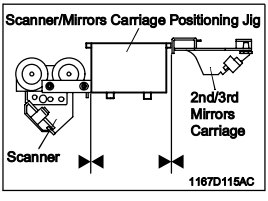
◎ Adjustment Procedure



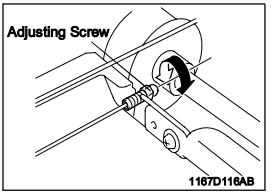

1. Remove the Exposure Lamp. (For details, see steps 1 through 7, (8) Removal of the Scanner, 2-4 OPTICAL SECTION.)
2. Temporarily loosen the set screws of the cable holding plate of the Scanner Drive Cable.




3. Fit the Scanner/Mirrors Carriage Positioning Jigs in the space between the Scanner and 2nd/3rd Mirrors Carriage.

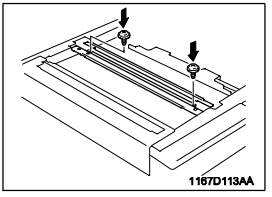



4. Press the Scanner up against the jig and 2nd/3rd Mirrors Carriage and, at the same time, tighten the set screws of the cable holding plate.

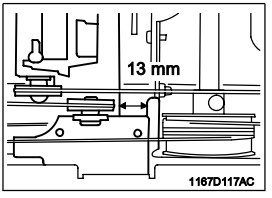



***NOTE***
*If the Scanner does not run parallel with the 2nd/3rd Mirrors Carriage when the Scanner/Mirrors Carriage Positioning Jigs are in position, turn the adjusting screw for the rear Scanner Drive Cable as necessary.*

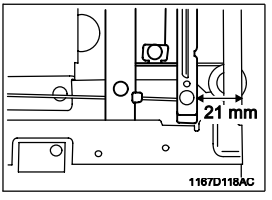
*** If the Scanner/Mirrors Carriage Positioning Jigs are not available, follow these steps to make the adjustment.**



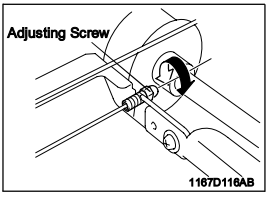

1. **Temporarily loosen the set screws of the cable holding plate of the Scanner Drive Cable.**




2. **Obtain a distance of 13 mm between the 2nd/3rd Mirrors Carriage and rail.**



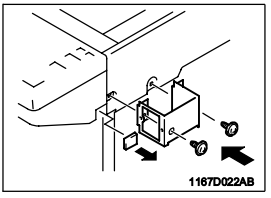

3. **Secure the Scanner where it is located at a position 21 mm from the right side face.**
4. **Tighten the set screws of the cable holding plate.**



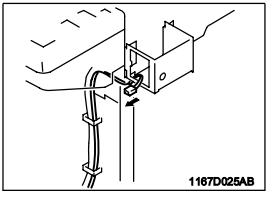

***NOTE***
*If the Scanner does not run parallel with the 2nd/3rd Mirrors Carriage, turn the adjusting screw for the rear Scanner Drive Cable as necessary.*

# 4 MISCELLANEOUS

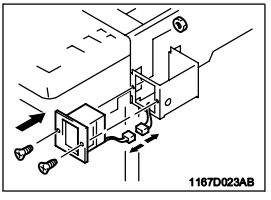
## 4-1. INSTALLATION OF THE KEY COUNTER SOCKET (OPTION)



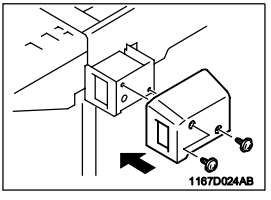

1. Remove the Front Cover.
2. Remove the knockout from the Front Upper Cover.
3. Using two screws, secure the Counter Mounting Bracket.




4. Route the harness of the Key Counter as shown.




5. Connect the Key Counter Socket connector.
6. Using one screw and one screw and nut, secure the counter socket.




7. Using two screws, secure the Key Counter Cover.

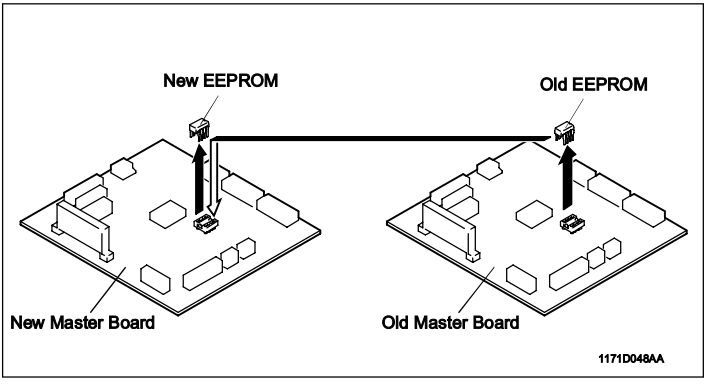
***NOTE***
*When the Key Counter Socket is mounted, set to "ON" the "Key Counter" available from the Security mode.*

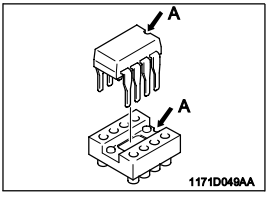
## 4-2. REMOUNTING THE EEPROM (IC3A)

*NOTES*

- *If the Imaging Cartridge is not to be replaced after the Master Board has been replaced with a new one, be sure to remount the EEPROM (IC3A) from the old to new Master Board.*
- *If the Master Board has been replaced with a new one and the EEPROM (IC3A) has not been remounted, be sure to replace the Imaging Cartridge with a new one. Because the EEPROM contains no data in this case, make settings and readjustments as necessary.*

1. **Remove the Master Board. (For details, see 2-2. REMOVAL OF CIRCUIT BOARDS AND OTHER ELECTRICAL COMPONENTS.)**
2. **Demount the EEPROM (IC3A) from the new Master Board.**
3. **Demount the EEPROM (IC3A) from the old Master Board and remount it onto the new Master Board.**




*NOTE*
*Note the alignment notch on the EEPROM (IC3A) when mounting the IC.*

# Di350

# TROUBLESHOOTING

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# 1 INTRODUCTION

## 1-1. General Precautions

1. When servicing the copier with its covers removed, use utmost care to prevent your hands, clothing, and tools from being caught in revolving parts including the chains and gears. When servicing the copier with the Rear Cover removed, be sure to fit the interlock switch actuating jig in position.
2. Before attempting to replace parts and unplug connectors, make sure that the power cord of the copier has been unplugged from the wall outlet.
3. Never create a closed circuit across connector pins except those specified in the text and on the printed circuit.
4. When creating a closed circuit and measuring a voltage across connector pins specified in the text, be sure to use the green wire (GND).
5. When the user is using a word processor or personal computer from a wall outlet of the same line, take necessary steps to prevent the circuit breaker from opening due to overloads.
6. Keep all disassembled parts in good order and keep tools under control so that none will be lost or damaged.

## 1-2. How to Use This Book

1. If a component on a PWB or any other functional unit including a motor is defective, the text only instructs you to replace the whole PWB or functional unit and does not give troubleshooting procedures applicable within the defective unit.
2. All troubleshooting procedures contained herein assume that there are no breaks in the harnesses and cords and all connectors are plugged into the right positions.
3. For the removal procedures of covers and parts, see DIS/REASSEMBLY, ADJUSTMENT.
4. The troubleshooting procedures are given in the order of greater frequency of trouble or order of operation.
5. The procedures preclude possible malfunctions due to noise and other external causes.

## 1-3. Reading the Text

1. The paper transport failure troubleshooting procedures are given according to the symptom. First identify the location where the paper is present and start the procedure for that particular location. For malfunction troubleshooting, start with step 1 and onward.
2. Make checks in numerical order of steps and, if an item is checked okay, go to the next step.

Pattern 1

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Is–? | YES | Do this. |
| 2 | | ↑ | |

Go to step 2 if you answered No.

Pattern 2

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Is–? | YES | Do this. |
| | | NO | Check that. |
| 2 | | | ↑ |

Go to step 2 if it checks okay.

# 2 I/O CHECK

## 2-1. Controlled Parts Check Procedure

To allow the Tech. Rep. to easily and safely determine whether a particular controlled part is fully operational, this copier provides the following provision: checking the data of the input port of the board IC with the copier in the standby state (including a misfeed, malfunction, and closure failure condition) allows the Tech. Rep. to determine whether signals are properly input to a controlled part.

<Procedure>
1. When a misfeed or malfunction occurs, locate on a circuit diagram accompanying the text the controlled part which is probably defective.
2. Select "I/O Check" from the Tech. Rep. Mode menu screen and then access the screen which contains the controlled part picked out in step 1 above. (See SWITCHES ON PWBs/TECH. REP. MODE.)
3. Check the input port data to determine if a signal is probably input to the controlled part.

<Controlled Part Check Procedure Through Checking Input Port Data>

**Example**
When a paper misfeed occurs in the paper take-up section of the copier, Synchronizing Roller Sensor PC2 is considered to be responsible for it.

<Procedure>
1. Remove the sheet of paper misfed.
2. From the I/O Check list, it is found that the signal input to PC2 is "Timing Roller."
3. Select "I/O Check" from Tech. Rep. Mode and then "Printer." Now, access the screen that contains "Timing Roller."
4. Check that the input port data of "Timing Roller" is "0" (sensor is blocked).
5. Move the PC2 actuator to unblock the sensor.
6. Check at this time that the input port data on the screen changes from "0" to "1."

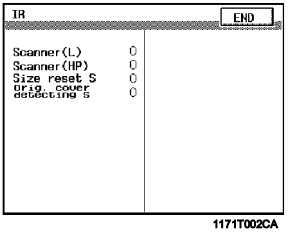
1: PC2 is operational. 0: PC2 is faulty.

## 2-2. I/O Check List

<I/O Check Screens>

- The following screens are only typical and the input data shown does not necessarily represent the actual one.

IR

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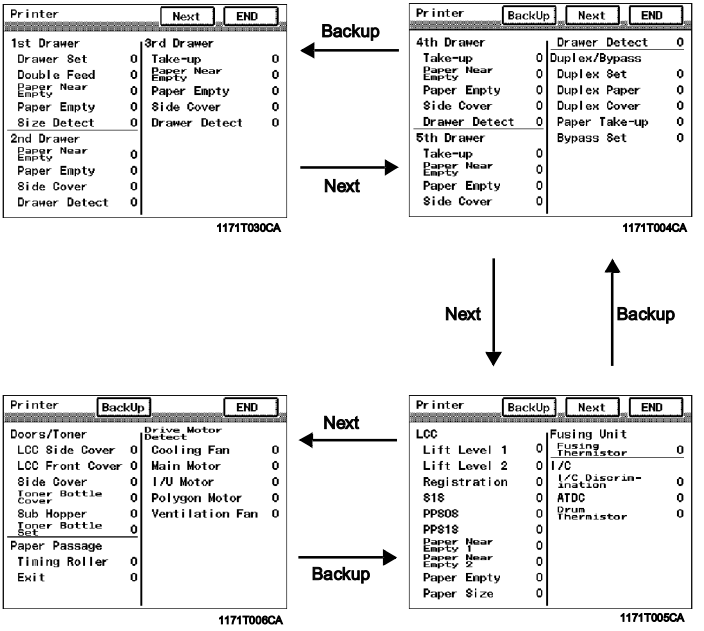
Printer

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<I/O Check List>

IR

| Symbol | Panel Display | Parts/Signal Name | Operation Characteristics/Panel Display | | Input Board | IC No. | Port No. | CN/PJ No. |
|---|---|---|---|---|---|---|---|---|
| | | | 1 | 0 | | | | |
| PC13 | Scanner (L) | Scanner Home Position Sensor 2 | Blocked | Unblocked | HGB Board | — | —— | CN7HGB-27 |
| PC12 | Scanner (HP) | Scanner Home Position Sensor 1 | At home | Not at home | | — | —— | CN7HGB-26 |
| S5 | Size reset S | Size Reset Switch | When closed | When opened | | — | —— | CN7HGB-24 |
| PC14 | Orig. cover detecting S | Original Cover Detecting Sensor | Within 15° | 15° or more | | — | —— | CN7HGB-25 |

Printer

| Symbol | Panel Display | | Parts/Signal Name | | Operation Characteristics/Panel Display | | Input Board | IC No. | Port No. | CN/PJ No. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 0 | | | | |
| PC6 | 1st Drawer | Drawer Set | Cassette Set Sensor | | In position | Out of position | Master Board PWB-A | IC1 | PO1 | PJ13A-5B |
| PWB-H | | Double Feed | Double Feed Detecting Board | | Blocked ✱1 | Unblocked ✱1 | | IC1 | PO2 | PJ14A-8B |
| PC5 | | Paper Near Empty | Paper Near Empty Sensor | | Unblocked | Blocked | | IC1 | PO3 | PJ13A-2B |
| PC4 | | Paper Empty | Paper Empty Sensor | | Paper not present | Paper present | | IC1 | PO5 | PJ14A-13A |
| PWB-I | | Size Detect | Paper Size Detecting Board | | Analog value | | | IC1 | P103/ AN3 | PJ14A-1B to PJ14A-4B |
| S5 | 2nd Drawer | Paper Near Empty | Paper Near Empty Sensor | | Unblocked | Blocked | Cassette Main Board PWB-A | IC1 | P12 | PJ3A-11B |
| S4 | | Paper Empty | Paper Empty Sensor | | Paper not present | Paper present | | IC1 | P6 | PJ3A-5B |
| S2 | | Side Cover | Side Cover Set Sensor | | When opened | When closed | | IC1 | P9 | PJ3A-8B |
| S1 | | Drawer Detect | Cassette Set Switch | | In position: 2 displayed Out of position: 0 displayed | | | IC1 | P11 | PJ3A-12A |
| S3 | 3rd Drawer | Take-up | Take-Up Sensor | | Paper present | Paper not present | Cassette Main Board PWB-A: PF-108/ PF-110 | IC1 | P5 | PJ3A-2B |
| S5 | | Paper Near Empty | Paper Near Empty Sensor | | Unblocked | Blocked | | IC1 | P12 | PJ3A-11B |
| S4 | | Paper Empty | Paper Empty Sensor | | Paper not present | Paper present | | IC1 | P6 | PJ3A-5B |
| S2 | | Side Cover | Side Cover Set Sensor | | When opened | When closed | | IC1 | P9 | PJ3A-8B |
| S1 | | Drawer Detect | Cassette Set Switch | When PF-110 is used | In position | Out of position | | IC1 | P10 | PJ3A-9A |
| | | | | When PF-108 is used | In position: 2 displayed Out of position: 0 displayed | | | IC1 | P11 | PJ3A-12A |

✱ 1: The display of 1 or 0 is selected only while Main Motor M2 is being energized.

| Symbol | Panel Display | | Parts/Signal Name | | Operation Characteristics/Panel Display | | Input Board | IC No. | Port No. | CN/PJ No. |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 1 | 0 | | | | |
| S3 | 4th Drawer | Take-up | Take-Up Sensor | | Paper present | Paper not present | Cassette Main Board PWB-A: PF-108/ PF-110 | IC1 | P5 | PJ3A-2B |
| S5 | | Paper Near Empty | Paper Near Empty Sensor | | Unblocked | Blocked | | IC1 | P12 | PJ3A-11B |
| S4 | | Paper Empty | Paper Empty Sensor | | Paper not present | Paper present | | IC1 | P6 | PJ3A-5B |
| S2 | | Side Cover | Side Cover Set Sensor | | When opened | When closed | | IC1 | P9 | PJ3A-8B |
| S1 | | Drawer Detect | Cassette Set Switch | When PF-110 is used | In position | Out of position | | IC1 | P10 | PJ3A-9A |
| | | | | When PF-108 is used | In position: 2 displayed Out of position: 0 displayed | | | IC1 | P11 | PJ3A-12A |
| S3 | 5th Drawer | Take-up | Take-Up Sensor | | Paper present | Paper not present | | IC1 | P5 | PJ3A-2B |
| S5 | | Paper Near Empty | Paper Near Empty Sensor | | Unblocked | Blocked | | IC1 | P12 | PJ3A-11B |
| S4 | | Paper Empty | Paper Empty Sensor | | Paper not present | Paper present | | IC1 | P6 | PJ3A-5B |
| S2 | | Side Cover | Side Cover Set Sensor | | When opened | When closed | | IC1 | P9 | PJ3A-8B |
| S1 | | Drawer Detect | Cassette Set Switch | When PF-110 is used | In position | Out of position | | IC1 | P10 | PJ3A-9A |
| | | | | When PF-108 is used | In position: 2 displayed Out of position: 0 displayed | | | IC1 | P11 | PJ3A-12A |
| —— | Duplex/ Bypass | Duplex Set | Duplex Unit Set signal | | In position | Out of position | Master Board PWB-A | IC1 | P91 | PJ4A-3B |
| PI1 | | Duplex Paper | Duplex Unit Transport Sensor | | Paper present | Paper not present | | IC1 | P92 | PJ4A-2B |
| S2 | | Duplex Cover | Duplex Unit Door Set Sensor | | When opened | When closed | | IC1 | P90 | PJ4A-1B |
| PC8 | | Paper Take-up | Manual Feed Paper Take-Up Sensor | | Paper present | Paper not present | | IC1 | P00 | PJ4A-7B |
| —— | | Bypass Set | Manual Bypass Tray Set signal | | In position | Out of position | | IC1 | P30 | PJ4A-9B |

| Symbol | Panel Display | | Parts/Signal Name | Operation Characteristics/Panel Display | | Input Board | IC No. | Port No. | CN/PJ No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 1 | 0 | | | | |
| LS1 | LCC | Lift Level 1 | Lift-Up Sensor 1 | At upper limit | Not at upper limit | LCC Main Board PWB-A: PF-106 | IC4 | P74/ ANI4 | CN4A-6 |
| LS2 | | Lift Level 2 | Lift-Up Sensor 2 | At upper limit | Not at upper limit | | IC4 | P73/ ANI3 | CN4A-9 |
| RSEN | | Regis-tration | Registration Sensor | Paper present | Paper not present | | IC4 | P22/ INTP1 | CN4A-2 |
| S1 | | S1S | Paper Standby Position Sensor | Paper present ✱2 | Paper not present ✱2 | | IC4 | P23/ INTP2/ CI | CN3A-5 |
| PPS0 | | PPS0S | LCC Take-Up Sensor | Paper present | Paper not present | | IC4 | P24/ INTP3 | CN4A-11 |
| PPS1 | | PPS1S | Paper Empty Sensor 1 | Paper present | Paper not present | | IC4 | P25/ INTP4/ ASCK | CN3A-2 |
| RS1 | | Paper Near Empty 1 | Paper Near Empty Sensor 1 | Blocked | Unblocked | | IC4 | P75/ ANI5 | CN6A-1 |
| RS2 | | Paper Near Empty 2 | Paper Near Empty Sensor 2 | Blocked | Unblocked | | IC4 | P76/ ANI6 | CN5A-5 |
| PPS2 | | Paper Empty | Paper Empty Sensor 2 | Paper present | Paper not present | | IC4 | P72/ ANI2 | CN3A-8 |
| SW1 | | Paper Size | DIP switch | Letter C: 0 displayed<br>A4C: 1 displayed<br>B5C: 2 displayed | | | IC4 | P13, P14, P15 | —— |
| TH1 | Fusing Unit | Fusing Ther-mistor | Fusing Roller Thermistor | Analog value | | Master Board PWB-A | IC1 | P107/ AN7 | PJ16A-5 |
| —— | I/C | I/C Discrimination | I/C Type Detection signal | Analog value | | | IC1 | P100/ AN0 | PJ15A-3 |
| E1 | | ATDC | ATDC Sensor | Analog value | | | IC1 | P106/ AN6 | PJ15A-5 |
| TH2 | | Drum Ther-mistor | I/C Thermistor | Analog value | | | IC1 | P104/ AN4 | PJ13A-10A |

✱ 2: The display of 1 or 0 is selected only while LCC Transport Motor HMOT is being energized.

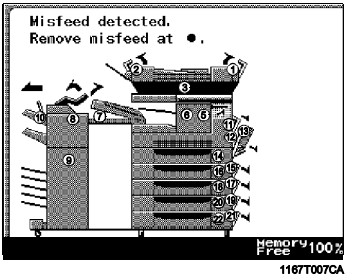
| Symbol | Panel Display | | Parts/Signal Name | Operation Characteristics/Panel Display | | Input Board | IC No. | Port No. | CN/PJ No. |
|---|---|---|---|---|---|---|---|---|---|
| | | | | 1 | 0 | | | | |
| SIDE | Doors/ Toner | LCC Side Cover | Side Cover Set Sensor | When opened | When closed | LCC Main Board PWB-A | IC4 | P34/ T00 | CN3A-12 |
| FRONT | | LCC Front Cover | LCC Set Sensor | Out of position | In position | | IC4 | P35/ T01 | CN6A-4 |
| S2 | | Side Cover | Side Cover Interlock Switch | When opened | When closed | Master Board PWB-A | IC1 | P31 | PJ7A-1 |
| PC11 | | Toner Bottle Cover | Toner Bottle Cover Sensor | When opened | When closed | | IC1 | P33 | PJ11A-5B |
| S4 | | Sub Hopper | Sub Hopper Toner Empty Switch | Toner not loaded: 1 and 0 alternately displayed. Toner loaded: 0 displayed | | | IC1 | P06 | PJ11A-7B |
| PC10 | | Toner Bottle Set | Toner Bottle Home Position Sensor | At home | Not at home | | IC1 | P40 | PJ11A-2B |
| PC2 | Paper Passage | Timing Roller | Synchronizing Roller Sensor | Paper present | Paper not present | | IC1 | P41 | PJ13A-7A |
| PC3 | | Exit | Paper Exit Sensor | Paper present | Paper not present | | IC1 | P77 | PJ13A-12A |
| M3 | Drive Motor Detect | Cooling Fan | Fusing Cooling Fan Motor/LOCK | When energized: 1 and 0 alternately displayed. When deenergized: 0 displayed | | | IC1 | P04 | PJ13A-5A |
| M2 | | Main Motor | Main Motor/LOCK | When energized | When deenergized | | IC1 | P43 | PJ16A-2 |
| M1 | | I/U Motor | I/C Motor/LOCK | When energized | When deenergized | | IC1 | P42 | PJ16A-4 |
| M10 | | Polygon Motor | Polygon Motor/ LOCK | When energized | When deenergized | | IC1 | P95 | PJ8A-4 |
| M8 | | Ventilation Fan | Ozone Fan Motor | When energized: 1 and 0 alternately displayed. When deenergized: 0 displayed | | | IC1 | P51 | PJ11A-3A |

# 3 PAPER TRANSPORT FAILURE

## 3-1. Paper Misfeed

When a paper misfeed occurs, the Touch Panel shows the corresponding message, misfeed location, and paper location.

| | |
|---|---|
| ⊗ display | Misfeed location |
| ○ display | Paper location |



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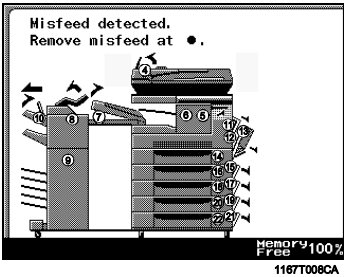

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| ⊗ or ○ Display | Misfeed/Paper Location | Ref. Page |
|---|---|---|
| 1 | AFR-14 take-up, AFR-14 single feed | See the relevant option service manual. |
| 2 | AFR-14 reverse, AFR-14 exit | |
| 3 | AFR-14 transport | |
| 4 | AF-7 take-up, AF-7 transport | |
| 5 | JS-200 transport | |
| 6 | JS-200 exit | |
| 7 | Horizontal transport | |
| 8 | Finisher transport, 1st Tray exit, Elevator Tray exit | |
| 9 | Mailbin transport | |
| 10 | Finisher Tray | |
| 11 | Separator, Fusing Unit | (3) |
| 12 | Manual Bypass take-up | (2) |
| 13 | Duplex turnover, Duplex take-up | (6) |
| 14 | 1st Drawer take-up | (1) |
| 15 | 2nd Drawer transport | (1) |
| 16 | 2nd Drawer take-up | (1) |
| 17 | 3rd Drawer transport (PF-108/PF-110/PF-106) | (4) or (5) |
| 18 | 3rd Drawer take-up (PF-108/PF-110/PF-106) | (4) or (5) |
| 19 | 4th Drawer transport (PF-108/PF-110/PF-106) | (4) or (5) |
| 20 | 4th Drawer take-up (PF-108/PF-110/PF-106) | (4) or (5) |
| 21 | 5th Drawer transport (PF-108/PF-110) | (4) |
| 22 | 5th Drawer take-up (PF-108/PF-110) | (4) |

* If a communications error occurs between UN2 and PWB-A during a copy cycle, it forces a paper misfeed condition (○ displayed on the Touch Panel). If that happens, check the circuit between UN2 and PWB-A for proper connection and, if it is intact, replace the board.

<Resetting the Display>

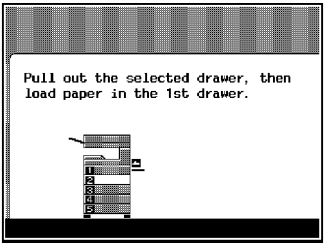
| Misfeed in the copier | Misfeed in the option |
|---|---|
| Remove all sheets of paper misfed and left inside, and then open and close the Side Cover. | Remove all sheets of paper misfed and left inside, and then raise and lower or disconnect and reconnect the option. |

* If the misfeed display is not reset by these procedures, check the misfeed detecting sensor at the paper location.

## 3-2. Size Error

The following warning screen appears after a misfeed display has been reset if the actual size of the paper loaded in a paper source differs from the paper size set for that particular paper source.

[1st to 5th Drawer]

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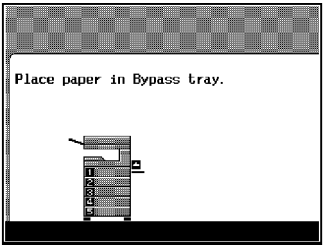
[Manual Bypass]

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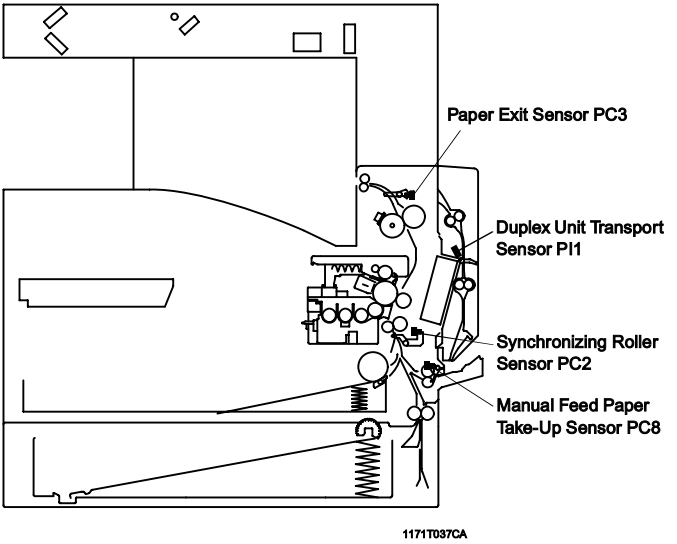
✱ 1st to 5th Drawer: A size error is indicated by a highlighted paper source in the copier overview display. (In the above example, there is a size error in the 2nd Drawer.)

<Resetting the Size Error Display>
Slide out the drawer, then slide it back in, or load paper in the Manual Bypass Tray.

<Causes of a Size Error>
- Wrong paper size settings have been made.
- The user loads paper of a size different from what is set for the paper source.
- Two or more sheets of paper are being taken up and fed in.

## 3-3. Misfeed Detection Sensor Layout


Paper Exit Sensor PC3
Duplex Unit Transport Sensor PI1
Synchronizing Roller Sensor PC2
Manual Feed Paper Take-Up Sensor PC8
1171T037CA

## 3-4. Types of Misfeed Detection and Detection Timings

- The following are the types of misfeed detection and detection timings for different misfeed locations.

*NOTE*
*For misfeed detection types and detection timings of options, see the relevant option service manual.*

<Copier Take-Up Misfeed>

| Type | Detection Timing | Timer Value T (sec.) |
|---|---|---|
| Paper take-up failure detection | • 1st Drawer paper take-up:<br>Synchronizing Roller Sensor PC2 is not unblocked (H) even after the lapse of T sec. after Paper Take-Up Solenoid SL1 has been energized for the second paper take-up retry sequence. | 0.92 |
| | • 2nd Drawer paper take-up:<br>PC2 is not unblocked (H) even after the lapse of T sec. after SL1 has been energized for the first paper take-up retry sequence. | 1.63 |
| | • 1st/2nd Drawer paper take-up:<br>PC2 is unblocked (H) within T sec. after SL1 has been energized. | 0.20 |

<Manual Bypass Take-Up Misfeed>

| Type | Detection Timing | Timer Value T (sec.) |
|---|---|---|
| Bypass paper take-up failure detection | PC2 is not unblocked (H) even after T sec. after Manual Feed Paper Take-Up Clutch CL3 has been energized. | 0.64 |
| | PC2 is unblocked (H) within T sec. after CL3 has been energized. | 0.20 |
| Paper left | Manual Feed Paper Take-Up Sensor PC8 is blocked (L) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed. | ——— |

<Separator Misfeed>

| Type | Detection Timing | Timer Value T (sec.) |
|---|---|---|
| Leading edge detection by Paper Exit Sensor PC3 | PC3 is not blocked (L) even after the lapse of T sec. after PC2 has been unblocked (H). | 1.38 ✱ |
| Trailing edge detection by Synchronizing Roller Sensor PC2 | PC2 is not blocked (L) even after the lapse of T sec. after it has been unblocked (H). | 3.02 ✱ |
| | PC2 is blocked (L) within T sec. after it has been unblocked (H). | 0.75 |
| Paper is stationary | During a sequence of detecting a paper size based on the period of time between when Synchronizing Clutch CL1 is energized and when PC2 is blocked (L), the paper size detected is longer than the size data sent from the controller by +260 mm or more. | ——— |
| Size error detection | The paper size detected based on the period of time between when CL1 is energized and when PC2 is blocked (L) is more than the size data sent from the controller by ±20 mm or more. | ——— |
| Paper left | PC2 is unblocked (H) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed. | ——— |

✱ Excludes the period of time during which the paper is stationary before the Synchronizing Roller.

<Fusing Misfeed>

| Type | Detection Timing | Timer Value T (sec.) |
|---|---|---|
| Trailing edge detection by Paper Exit Sensor PC3 | PC3 is not unblocked (H) even after the lapse of T sec. after PC2 has been blocked (L). | 1.41 |
| Paper left | PC3 is blocked (L) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed. | ——— |

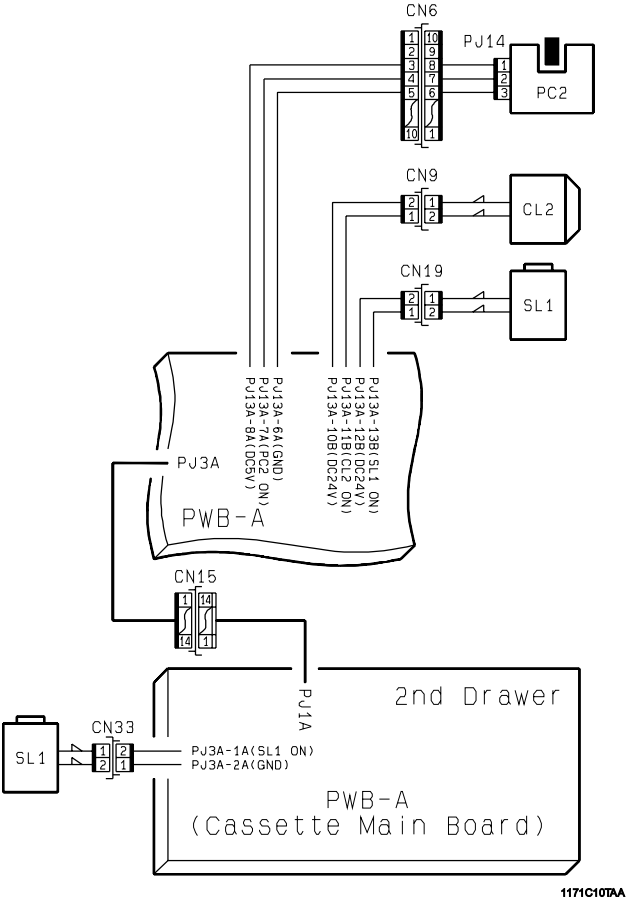
<Duplex Turnover/Take-Up Misfeed>

| Type | Detection Timing | Timer Value T (sec.) |
|---|---|---|
| Leading edge detection during Duplex transport | Duplex Unit Transport Sensor PI1 is not blocked (H) even after the lapse of T sec. after Paper Exit Sensor PC3 has been unblocked (H). | 1.52 |
| Paper take-up failure detection | PC2 is not unblocked (H) even after the lapse of T sec. after the Duplex paper take-up sequence has been started. | 0.88 |
| | PC2 is unblocked (H) within T sec. after the Duplex paper take-up sequence has been started. | 0.20 |
| Paper left | PI1 is blocked (H) when the Power Switch is turned ON, CPU is reset, or cover is opened and closed. | ——— |

## 3-5. Misfeed Troubleshooting Procedures

### (1) Copier Take-Up Misfeed

| Relevant Electrical Parts | |
|---|---|
| Paper Take-Up Solenoid SL1 | Master Board PWB-A |
| Synchronizing Roller Sensor PC2 | Cassette Main Board PWB-A |



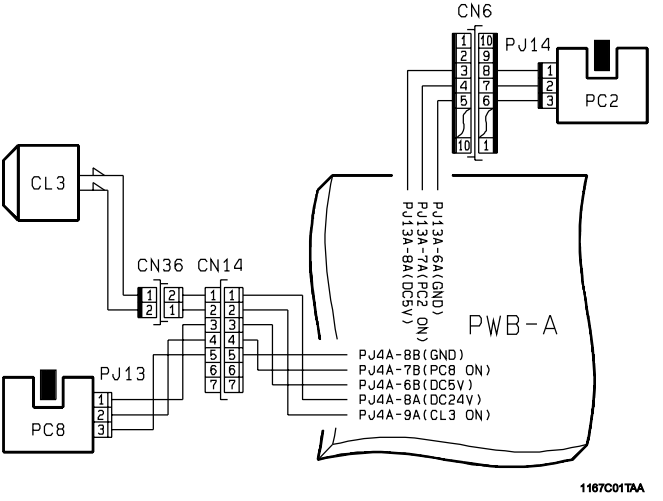

1171C10TAA

<Copier Take-Up Misfeed Troubleshooting Procedure>

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Paper is not taken up at all. | 1 | Does the paper being used meet the product specifications? | NO | Instruct the user to use the paper that meets product specifications. |
| | 2 | Is the paper curled, wavy, or damp? | YES | Change the paper. Instruct the user on the storage of paper. |
| | 3 | Are the Edge Guide and Trailing Edge Stop (of the drawer) positioned to the exact size of the paper used? | NO | Slide the guides to the exact size of the paper. |
| | 4 | Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Take-Up Roll. |
| | 5 | If the Paper Lifting Plate dirty or deformed? | YES | Clean or change the Paper Lifting Plate. |
| | 6 | Has the misfeed been detected while the Multi Purpose Cassette was being used? | YES | Check steps 7 and 8. |
| | | | NO | Check steps 9 and onward. |
| | 7 | Is the Paper Separator Pad deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Separator Pad. |
| | 8 | Check SL1 for operation. Does the voltage across CN19-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed? | YES | Check various parts for possible overload and, if they are okay, change SL1. |
| | | | NO | Change PWB-A. |
| | 9 | Is the Paper Separator Finger dirty or deformed? | YES | Clean or change the Paper Separator Finger. |
| | 10 | Check CL2 for operation. Does the voltage across CN9-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed? | NO | Change PWB-A. |
| | 11 | Check SL1 for operation. Does the voltage across PJ3A-1A on PWB-A (Cassette Main Board) and GND change from LOW to HIGH when the Start key is pressed? | YES | Check various parts for possible overload and, if they are okay, change SL1 or CL2. |
| | | | NO | Change PWB-A (Cassette Main Board) or PWB-A. |
| • Paper is at a stop before the vertical transport section.<br>• Paper is at a stop near the Synchronizing Rollers. | 1 | Is the Vertical Transport Roller deformed, worn, or dirty with paper dust? | YES | Clean or change the Vertical Transport Roller. |
| | 2 | If the Vertical Transport Guide Plate dirty or deformed? | YES | Clean or change the Vertical Transport Guide Plate. |
| | 3 | Is PC2 fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change PWB-A. |
| | | | NO | Check the PC2 actuator for operation and, if it is intact, change PC2. |

### (2) Manual Bypass Take-Up Misfeed

| Relevant Electrical Parts | |
|---|---|
| Manual Feed Paper Take-Up Clutch CL3 | Manual Feed Paper Take-Up Sensor PC8 |
| Synchronizing Roller Sensor PC2 | Master Board PWB-A |

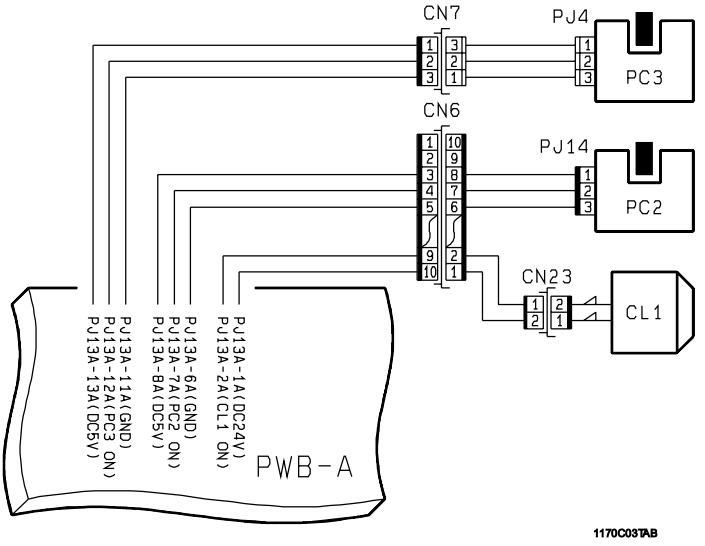


<Manual Bypass Take-Up Misfeed Troubleshooting Procedure>

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Paper is not taken up at all. | 1 | Does the paper being used meet the product specifications? | NO | Instruct the user to use the paper that meets product specifications. |
| | 2 | Is the paper curled, wavy, or damp? | YES | Change the paper. Instruct the user on the storage of paper. |
| | 3 | Is the Manual Feed Paper Take-Up Roller or Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Manual Feed Paper Take-Up Roller or Roll. |
| | 4 | Is PC8 fully operational? Check the input data using I/O Check. | NO | Check the PC8 actuator for operation and, if it is intact, change PC8. |
| | 5 | Check CL3 for operation. Does the voltage across CN14-2 and GND change from DC24V to DC0V when the misfeed condition is reset? | YES | Check various parts for possible overload and, if they are okay, change CL3. |
| | | | NO | Change PWB-A. |
| Paper is at a stop near the Synchronizing Rollers. | 1 | Is PC2 fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change PWB-A. |
| | | | NO | Check the PC2 actuator for operation and, if it is intact, change PC2. |

### (3) Separator/Fusing Misfeed

| Relevant Electrical Parts | |
|---|---|
| Paper Exit Sensor PC3 | Synchronizing Clutch CL1 |
| Synchronizing Roller Sensor PC2 | Master Board PWB-A |

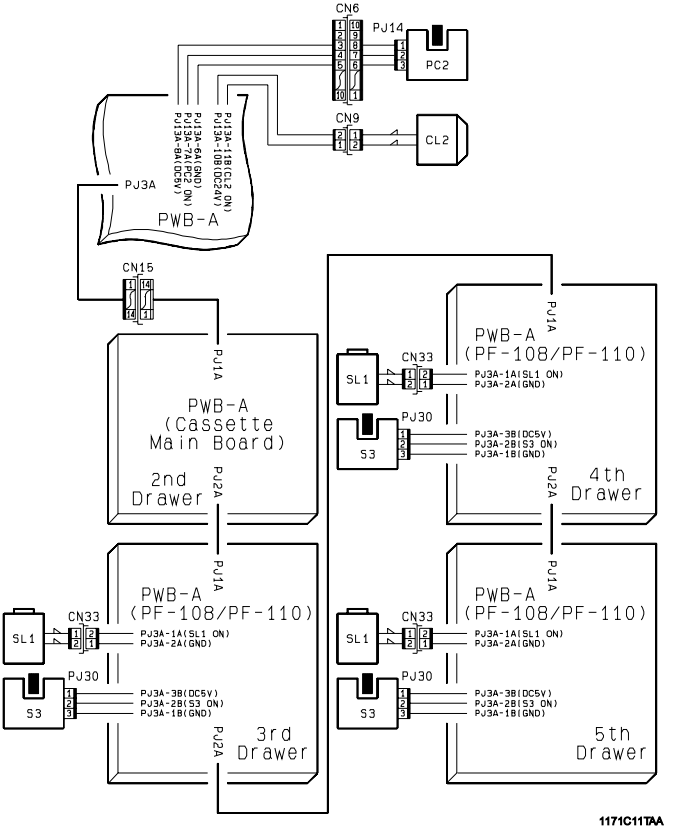


<Separator/Fusing Misfeed Troubleshooting Procedure>

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Paper is at a stop near the Synchronizing Rollers. | 1 | Are the Synchronizing Rollers deformed, worn, or dirty with paper dust? | YES | Clean or change the Synchronizing Rollers. |
| | 2 | Is a good length of loop formed before the Synchronizing Rollers? | NO | Select the following functions in this order: Tech. Rep. Mode → Tech. Rep. Choice → Printer → Loop Adjustment and make the loop adjustment. |
| | 3 | Is a size error displayed when the misfeed display is reset? | YES | Check that the size of the paper actually loaded in the current paper source matches the size set for it. |
| | 4 | Is PC2 fully operational? Check the input data using I/O Check. | NO | Check the PC2 actuator for operation and, if it is intact, change PC2. |
| | 5 | Check CL1 for operation. Does the voltage across CN6-9 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed? | YES | Check various parts for possible overload and, if they are okay, change CL1. |
| | | | NO | Change PWB-A. |
| Paper is at a stop near the PC Drum. | 1 | Is the Pre-Image Transfer Guide Plate dirty or deformed? | YES | Clean or change the guide plate. |
| | 2 | Is the Image Transfer Roller deformed, worn, or dirty with paper dust? | YES | Clean or change the Image Transfer Roller. |
| Paper is wedged at the PC Drum Paper Separator Fingers. | 1 | Are the PC Drum Paper Separator Fingers dirty or deformed? | YES | Clean or change the separator fingers. |
| | | | NO | Check the clearance between the PC Drum Paper Separator Fingers and PC Drum. |
| Paper is at a stop before the Fusing Rollers. | 1 | Is the Fusing Guide Plate dirty or deformed? | YES | Clean or change the Fusing Guide Plate. |
| Paper is at a stop at the Fusing Rollers. | 1 | Are the Fusing Rollers deformed, worn, or dirty with paper dust? | YES | Clean or change the Fusing Rollers. |
| | 2 | Are the Fusing Separator Fingers dirty or deformed? | YES | Clean, correct, or change the Fusing Separator Fingers. |
| Paper is at a stop at the exit section. | 1 | Is the Paper Exit Roller deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Exit Roller. |
| | 2 | Is PC3 fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change PWB-A. |
| | | | NO | Check the PC3 actuator for operation and, if it is intact, change PC3. |

### (4) Paper Take-Up/Transport Misfeed (PF-108/PF-110)

| Relevant Electrical Parts | |
|---|---|
| Paper Take-Up Solenoid SL1 | Master Board PWB-A |
| Take-Up Sensor S3 | Cassette Main Board PWB-A |
| Synchronizing Roller Sensor PC2 | Cassette Main Board PWB-A: PF-108/PF-110 |
| Transport Clutch CL2 | |

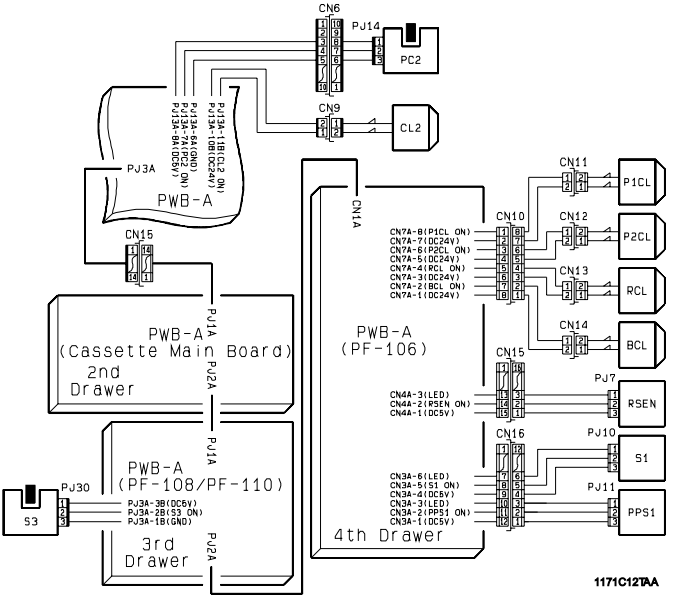


<Paper Take-Up/Transport Misfeed (PF-108/PF-110) Troubleshooting Procedure>

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Paper is not taken up at all. | 1 | Does the paper being used meet the product specifications? | NO | Instruct the user to use the paper that meets product specifications. |
| | 2 | Is the paper curled, wavy, or damp? | YES | Change the paper. Instruct the user on the storage of paper. |
| | 3 | Are the Edge Guide and Trailing Edge Stop (of the drawer) positioned to the exact size of the paper used? | NO | Slide the guides to the exact size of the paper. |
| | 4 | Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Take-Up Roll. |
| | 5 | Is the Paper Lifting Plate dirty or deformed? | YES | Clean or change the Paper Lifting Plate. |
| | 6 | Is the Paper Separator Finger dirty or deformed? | YES | Clean or change the Paper Separator Finger. |
| | 7 | Check CL2 for operation.<br>Does the voltage across CN9-1 on the PWB-A side and GND change from DC24V to DC0V when the Start key is pressed? | NO | Change PWB-A. |
| | 8 | Check SL1 for operation.<br>Does the voltage across PJ3A-1A on PWB-A (PF-108/PF-110) and GND change from LOW to HIGH when the Start key is pressed? | YES | Check various parts for possible overload and, if they are okay, change SL1 or CL2. |
| | | | NO | Change PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |
| • Paper is at a stop at the vertical transport section.<br>• Paper is at a stop near the Synchronizing Rollers. | 1 | Is the Vertical Transport Roller deformed, worn, or dirty with paper dust? | YES | Clean or change the Vertical Transport Roller. |
| | 2 | Is the Vertical Transport Guide Plate dirty or deformed? | YES | Clean or change the Vertical Transport Guide Plate. |
| | 3 | Is a size error displayed when the misfeed display is reset? | YES | Check that the size of the paper loaded in the current drawer matches the size set for that drawer. |
| | 4 | ✱ A misfeed is detected at the transport section of the 3rd Drawer.<br>Is PC2 fully operational? Check the input data using I/O Check. | NO | Check the PC2 actuator for operation and, if it is intact, change PC2. |
| | 5 | Are all S3's fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change PWB-A. |
| | 6 | Does the voltage across PJ3A-2B on PWB-A (PF-108/PF-110) and GND change to DC0V when S3 is blocked and to DC5V when S3 is unblocked? | YES | Change PWB-A (PF-108/PF-110) or PWB-A (Cassette Main Board). |
| | | | NO | Check the S3 actuator for operation and, if it is intact, change S3. |

### (5) Paper Take-Up/Transport Misfeed (PF-106)

| Relevant Electrical Parts | |
|---|---|
| Take-Up Clutch 1 P1CL | Synchronizing Roller Sensor PC2 |
| Take-Up Clutch 2 P2CL | Transport Clutch CL2 |
| Paper Empty Sensor 1 PPS1 | Take-Up Sensor S3 |
| Paper Standby Position Sensor S1 | LCC Main Board PWB-A: PF-106 |
| Separator Clutch BCL | Cassette Main Board PWB-A: PF-108/PF-110 |
| Registration Clutch RCL | Cassette Main Board PWB-A |
| Registration Sensor RSEN | Master Board PWB-A |




<Paper Take-Up/Transport Misfeed (PF-106) Troubleshooting Procedure>

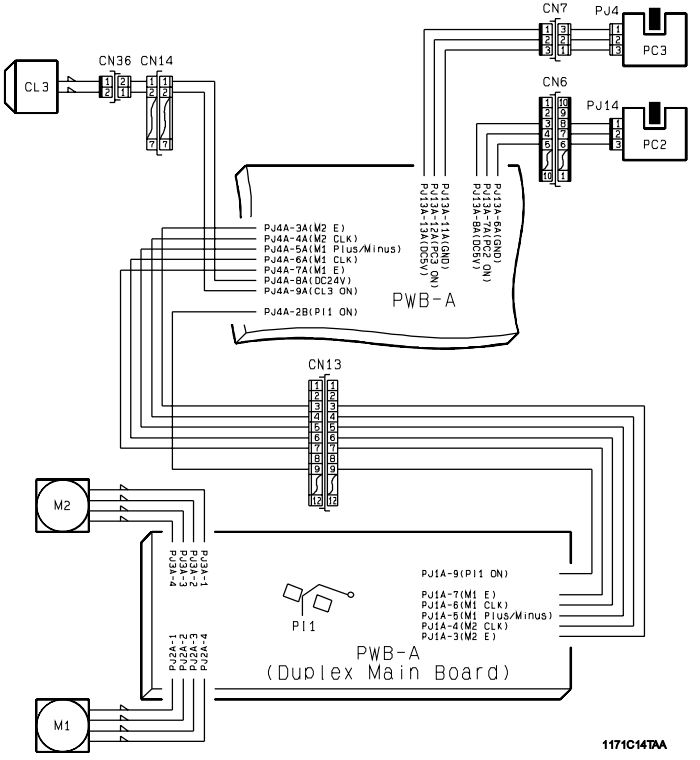
| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| • Paper is not taken up at all.<br>• Paper is at a stop before the Paper Feed/ Separator Rolls. | 1 | Does the paper being used meet the product specifications? | NO | Instruct the user to use the paper that meets product specifications. |
| | 2 | Is the paper curled, wavy, or damp? | YES | Change the paper. Instruct the user on the storage of paper. |
| | 3 | Is the Paper Take-Up Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Take-Up Roll. |

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| • Paper is not taken up at all.<br>• Paper is at a stop before the Paper Feed/ Separator Rolls. | 4 | Is PPS1 fully operational? Check the input data using I/O Check. | YES | Perform steps 6 and onward. |
| | 5 | Does the voltage across CN3A-2 on PWB-A (PF-106) and GND change from LOW to HIGH when PPS1 is blocked? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order. |
| | | | NO | Change PPS1. |
| | 6 | Is paper fed up to S1 when paper is loaded in Lift 2 only and the drawer is slid into the copier? | YES | Perform steps 8 and onward. |
| | 7 | Check P2CL for operation. Does the voltage across CN7A-6 on PWB-A (PF-106) and GND change from DC24V to DC0V when step 6 is performed again? | YES | Check various parts for possible overload and, if they are okay, change P2CL. |
| | | | NO | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |
| | 8 | Check P1CL for operation. Does the voltage across CN7A-8 on PWB-A (PF-106) and GND change from DC24V to DC0V when step 6 is performed again? | NO | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |
| | 9 | Is S1 fully operational? Check the input data using I/O Check. Does the "S1S" input signal change from 0 to 1 when the drawer loaded with paper is slid into the copier? | YES | Perform steps 11 and onward. |
| | 10 | Does the voltage across CN3A-5 on PWB-A (PF-106) and GND change from LOW to HIGH when step 9 is performed again? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order. |
| | | | NO | Change S1. |
| | 11 | Is the Paper Feed Roll or Separator Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Feed Roll or Separator Roll. |
| | 12 | Check BCL for operation. Does the voltage across CN7A-2 on PWB-A (PF-106) and GND change from DC24V to DC0V when the Start key is pressed? | YES | Check various parts for possible overload and, if they are okay, change P1CL or BCL. |
| | | | NO | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| • Paper is at a stop at the vertical transport section.<br>• Paper is at a stop near the Synchronizing Rollers. | 1 | Is the Vertical Transport Roller or Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Vertical Transport Roller or Roll. |
| | 2 | Is RSEN fully operational? Check the input data using I/O Check. | YES | Check step 4 and onward. |
| | 3 | Does the voltage across CN4A-2 on PWB-A (PF-106) and GND change from LOW to HIGH when RSEN is blocked? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order. |
| | | | NO | Change RSEN. |
| | 4 | Check RCL for operation. Does the voltage across CN7A-4 on PWB-A (PF-106) and GND change from DC24V to DC0V when the Start key is pressed? | NO | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |
| | 5 | Check CL2 for operation. Does the voltage across CN9-1 on PWB-A and GND change from DC24V to DC0V when the Start key is pressed? | NO | Change PWB-A. |
| | 6 | ✱ If the 3rd Drawer is PF-106<br>Is PC2 fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change RCL, CL2, or PWB-A, in that order. |
| | | | NO | Check the PC2 actuator for operation and, if it is intact, change PC2. |
| | 7 | ✱ If the 4th Drawer is PF-106<br>Is S3 fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change RCL, CL2, or PWB-A, in that order. |
| | 8 | Does the voltage across PJ3A-2B on PWB-A (PF-108/PF-110) and GND change to DC0V when S3 is blocked and to DC5V when S3 is unblocked? | YES | Change PWB-A (PF-108/PF-110) or PWB-A (Cassette Main Board). |
| | | | NO | Check the S3 actuator for operation and, if it is intact, change S3. |

### (6) Duplex Turnover/Take-Up Misfeed

| Relevant Electrical Parts | |
|---|---|
| Paper Exit Sensor PC3 | Duplex Unit Transport Motor M2 |
| Duplex Unit Transport Sensor PI1 | Manual Feed Paper Take-Up Clutch CL3 |
| Synchronizing Roller Sensor PC2 | Master Board PWB-A |
| Switchback Motor M1 | Duplex Main Board PWB-A |



<Duplex Turnover/Take-Up Misfeed Troubleshooting Procedure>

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Paper is at a stop near the exit section. | 1 | Is the Paper Exit Roller deformed, worn, or dirty with paper dust? | YES | Clean or change the Paper Exit Roller. |
| | 2 | Is PC3 fully operational? Check the input data using I/O Check. | NO | Check the PC3 actuator for operation and, if it is intact, change PC3. |
| | 3 | Check M1 for operation. Does the voltage across PJ1A-7 on PWB-A (Duplex Main Board) and GND change from DC5V to DC0V during a 2-sided copy cycle? | YES | Check gears for proper engagement. |
| | | | NO | Change PWB-A. |
| | 4 | Does the voltage across PJ1A-5 on PWB-A (Duplex Main Board) and GND change from DC5V to DC0V during a 2-sided copy cycle? | YES | Check various parts for possible overload and, if they are okay, change M1 or PWB-A (Duplex Main Board). |
| | | | NO | Change PWB-A. |
| Paper is at a stop inside the Duplex Unit. | 1 | Is the Duplex Unit Transport Roller or Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Duplex Unit Transport Roller or Roll. |
| | 2 | Is a torn piece of paper present on the paper path surface? | YES | Remove the torn piece of paper. |
| | 3 | Is the Manual Feed Take-Up Roller or Roll deformed, worn, or dirty with paper dust? | YES | Clean or change the Manual Feed Take-Up Roller or Roll. |
| | 4 | Check M2 for operation. Does the voltage across PJ1A-3 on PWB-A (Duplex Main Board) and GND change from DC5V to DC0V during a 2-sided copy cycle? | YES | Check gears for proper engagement. |
| | | | NO | Change PWB-A. |
| | 5 | Is PI1 fully operational? Check the input data using I/O Check. | NO | Check the PI1 actuator for operation and, if it is intact, change PWB-A (Duplex Main Board). |
| | 6 | Check CL3 for operation. Does the voltage across CN14-2 and GND change from DC24V to DC0V when paper is taken up from the Duplex Unit? | YES | Check various parts for possible overload and, if they are okay, change CL3 or M2. |
| | | | NO | Change PWB-A. |
| Paper is at a stop near the Synchronizing Rollers. | 1 | Is PC2 fully operational? Check the input data using I/O Check. | YES | Check various parts for possible overload and, if they are okay, change PWB-A. |
| | | | NO | Check the PC2 actuator for operation and, if it is intact, change PC2. |

# 4 MALFUNCTION

The copier CPU has a function that self-diagnoses the copier conditions. On detection of a malfunction, the corresponding code representing a particular malfunction name, location, and details as listed below is displayed on the Touch Panel together with a Tech. Rep. call message.

- Perform the following steps to reset the malfunction.

**Malfunction Resetting Procedure**

- Turn OFF, then ON the Power Switch or open and close the Side Cover for all malfunctions except fusing-related ones (C05**).
- Use "Trouble Reset" of the "Initial" screen to reset all malfunctions including fusing-related ones (C05**).

## 4-1. Detection Timing by Malfunction Code

| Code | Description | Detection Timing |
|---|---|---|
| C0000 | Main Motor M2 malfunction | The Lock signal remains HIGH for a continuous 1-sec. period or more while M2 remains energized. |
| C0010 | I/C Motor M1 malfunction | The Lock signal remains HIGH for a continuous 1-sec. period or more while M1 remains energized. |
| C0045 | Fusing Cooling Fan Motor M3 malfunction | The Lock signal remains HIGH or LOW for a continuous 1-sec. period or more while M3 remains energized. |
| C004C | Ozone Fan Motor M8 malfunction | The Lock signal remains HIGH or LOW for a continuous 1-sec. period or more while M8 remains energized. |
| C004E | Power Unit Cooling Fan Motor M4 | The Lock signal (analog input voltage) remains 0.4V or less for a continuous 0.5-sec. period or more while M4 remains energized. |
| C0070 | Main Hopper Toner Replenishing Motor M6 malfunction | • Toner Bottle Home Position Sensor PC10 remains blocked (L) for a continuous 2-sec. period or more while M6 remains energized.<br>• PC10 remains unblocked (H) for a continuous 6-sec. period or more while M6 remains energized. |
| C0050 | Warming-up failure | The temperature of the Fusing Rollers do not reach the required level even after the lapse of a given period of time during a warming-up cycle.<br>• From room temperature to 100°C: Within 65 sec.<br>• From 100°C to 140°C: Within 25 sec.<br>• From 140°C to 170°C: Within 20 sec.<br>• From 170°C to the completion of warming-up: Within 22 sec. |
| C0510 | Abnormally low fusing temperature | • The fusing temperature remains 130°C or less for a continuous 0.1-sec. period or more during the standby state or printing.<br>• The fusing temperature remains 105°C or less for a continuous 2-min. period or more during the low-temperature standby state. |
| C0520 | Abnormally high fusing temperature | The fusing temperature remains 230°C or more for a continuous 0.1-sec. period or more. |

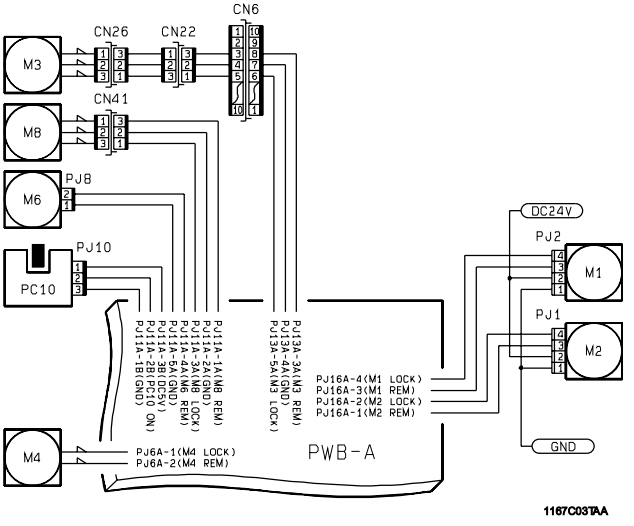
| Code | Description | Detection Timing |
|---|---|---|
| C0650 | Faulty Scanner Home Position Sensor 1 PC12 | <The Power Switch is turned ON, Original Cover lowered, or Start key pressed when the Scanner is at its home position><br>• PC12 is not unblocked (H) even when the Scanner moves 10 mm to the left.<br>• PC12 is not blocked (L) even when the Scanner moves 4 mm to the right after PC12 has been unblocked (H).<br><The Power Switch is turned ON, Original Cover lowered, or Start key pressed when the Scanner is at any position other than home><br>• PC12 is not blocked (L) even when the Scanner moves 469.5 mm to the right. |
| C0651 | Faulty Scanner Home Position Sensor 2 PC13 | When the Start key is pressed with a document loaded in the Document Feed Tray of AF-7, PC13 is not blocked (L) even when the Scanner moves 463 mm to the left after PC12 has been unblocked (H). |
| C0990 | LCC Lift-Up Motor EMOT malfunction (PF-106) | ✱ See option service manual. |
| C0991 | Lift 1 ascent motion failure (PF-106) | |
| C0995 | LCC Transport Motor HMOT malfunction (PF-106) | |
| C0999 | Lift 2 ascent motion failure (PF-106) | |
| C099D | Communications error (PF-106) | |
| C0B00 | Transport Motor M1 drive malfunction (FN-100/FN-500) | |
| C0B0F | Paper Entrance Switching Motor M1 drive malfunction (FN-100/FN-500) | |
| C0B30 | CD Aligning Motor M4 drive malfunction (FN-100/FN-500) | |
| C0B38 | Shift Motor M5 drive malfunction (FN-100/FN-500) | |
| C0B4D | Paper Holding Tray Motor M10 drive malfunction (FN-100/FN-500) | |
| C0B4E | Finisher Tray Motor M8 drive malfunction (FN-100/FN-500) | |
| C0B50 | Stapling Motor drive malfunction (FN-100/FN-500) | |
| C0BA0 | Elevator Motor M9 drive malfunction (FN-100/FN-500) | |
| C0F32 | Faulty ATDC Sensor E1 | The value of data read by E1 is faulty. [E1 reading is 7% or less (3.92V or more) or 19% or more (1.41V or less).] |

| Code | Description | Detection Timing |
|---|---|---|
| C0F33 | ATDC adjustment failure | • In an F8 (ATDC control voltage automatic adjustment) operation, the adjustment of ATDC control voltage is not completed within 1 min. after E1 sampling.<br>• In an F8 operation, the control voltage falls outside the range of 5.39V to 8.15V. |
| C1038 | Engine connection error | • The system fails in checking initial engine connection when Power Switch S1 is turned ON.<br>• The system succeeded in checking initial connection when S1 was turned ON; then it fails in rechecking initial connection through the execution of a software reset when a communications error occurs during operation. |
| C1300 | Polygon Motor M10 malfunction | <Resolution selection failure detection><br>• The Lock signal is not detected for a given period of time after the resolution has been selected. (The Lock signal is not, however, detected for 1 sec. after the start.)<br><Faulty Lock signal detection><br>• No Lock signals are detected for the 1-sec. period which starts 1 sec. after the first Lock.<br>✱ First Lock: The first Lock signal following 1 sec. after the selection of start or half speed.<br><Out-of-timing Lock detection><br>• The Lock signal is not detected for a continuous 0.5-sec. period while M10 is in the stabilized turning state (after a Lock has been detected).<br><Abnormal Lock detection><br>• The Lock signal remains ON for a continuous 5-sec. period while M10 remains deenergized. |
| C133A | Communications error (G/A) | ——— |
| C133B | Communications error (option I/F) | ——— |
| C13C0 | I/C initialization failure | After failing to blow the imaging cartridge fuse 2 consecutive times, 3.6V or more is detected and the I/C is determined to be new. |
| C13D0 | Faulty EEPROM | No initial data is written in EEPROM. |
| C13F0 | HSYNC detection failure | • The SOS rising edge is not detected even after the lapse of 0.2 sec. after Polygon Motor M10 has started and laser output started.<br>• No SOS rising edges are detected while VIA remains ON. |

## 4-2. Troubleshooting Procedures by Malfunction Code

**(1) C0000: M2 Malfunction**
**C0010: M1 Malfunction**
**C0045: M3 Malfunction**
**C004C: M8 Malfunction**
**C004E: M4 Malfunction**
**C0070: M6 Malfunction**

| Relevant Electrical Parts | |
|---|---|
| I/C Motor M1 | Main Hopper Toner Replenishing Motor M6 |
| Main Motor M2 | Ozone Fan Motor M8 |
| Fusing Cooling Fan Motor M3 | Toner Bottle Home Position Sensor PC10 |
| Power Unit Cooling Fan Motor M4 | Master Board PWB-A |



C0000

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does M2 turn after the malfunction has been reset? | NO | Check various parts for possible overload. |
| 2 | Check M2 for operation.<br>Does the voltage across PJ1-3 of M2 and GND change from DC5V to DC0V after the malfunction has been reset? | NO | Change PWB-A. |
| 3 | Does the voltage across PJ1-4 of M2 and GND change from DC5V to DC0V after the malfunction has been reset? | YES | Change PWB-A. |
| | | NO | Change M2. |

C0010

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does M1 turn after the malfunction has been reset? | NO | Check various parts for possible overload. |
| 2 | Check M1 for operation.<br>Does the voltage across PJ2-3 of M1 and GND change from DC5V to DC0V after the malfunction has been reset? | NO | Change PWB-A. |
| 3 | Does the voltage across PJ2-4 of M1 and GND change from DC5V to DC0V after the malfunction has been reset? | YES | Change PWB-A. |
| | | NO | Change M14. |

C0045

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does M3 turn after the malfunction has been reset? | NO | Check the connector and harness between M3 and PWB-A. |
| 2 | Check M3 for operation.<br>Does the voltage across CN6-8 on the PWB-A side and GND change from DC0V to DC24V after the malfunction has been reset? | NO | Change PWB-A. |
| 3 | Does the "C0045" display persist even after M3 has been replaced with a new one? | YES | Change PWB-A. |

C004C

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does M8 turn after the malfunction has been reset? | NO | Check various parts for possible overload. |
| 2 | Check M8 for operation.<br>Does the voltage across CN41-3 on the PWB-A side and GND change from DC0V to DC24V after the malfunction has been reset? | NO | Change PWB-A. |
| 3 | Does the "C004C" display persist even after M8 has been replaced with a new one? | YES | Change PWB-A. |

C004E

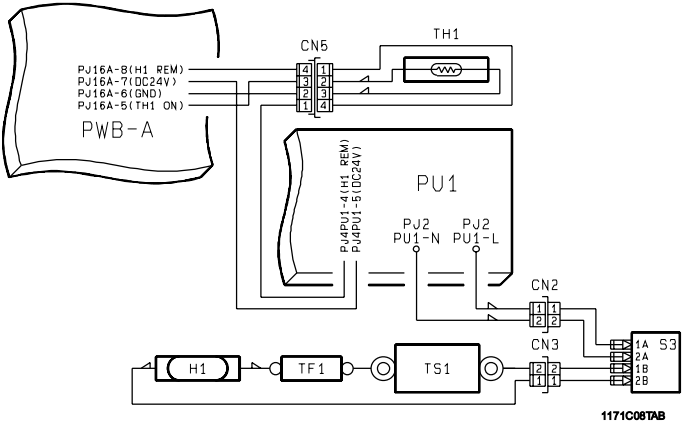
| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does M4 turn after the malfunction has been reset? | YES | Change PWB-A. |
| 2 | Does the "C004E" display persist even after M4 has been replaced with a new one? | YES | Change PWB-A. |

C0070

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | After the malfunction has been reset, remove the Rear Lower Cover and block Toner Bottle Cover Sensor PC11. Then, unlocking the Toner Bottle Lock Lever, turn the Toner Bottle a half turn by hand. Does the Toner Bottle turn when PC11 is unblocked (H) with the Toner Bottle Lock Lever kept unlocked? | YES | Perform step 3. |
| | | NO | Check various parts for possible overload. |
| 2 | Does the voltage across PJ8-2 of M6 and GND change from DC0V to DC24V when step 1 is performed again? | YES | Change M6. |
| | | NO | Change PWB-A. |
| 3 | Is PC10 fully operational?<br>Check the input data using I/O Check. Does the input signal value for "Toner Bottle Set" change between "0" and "1" when the Toner Bottle is turned by hand? | YES | Change PWB-A. |
| | | NO | Change PC10. |

**(2) C0500: Warming-up Failure**
**C0510: Abnormally Low Fusing Temperature**
**C0520: Abnormally High Fusing Temperature**

| Relevant Electrical Parts | |
|---|---|
| Fusing Roller Heater Lamp H1 | Fusing Roller Heater Lamp Fuse TF1 |
| Fusing Roller Thermistor TH1 | Side Cover Interlock Switch 2 S3 |
| Fusing Roller Thermostat TS1 | Power Supply Unit 1 PU1 |
| | Master Board PWB-A |



C0500, C0510

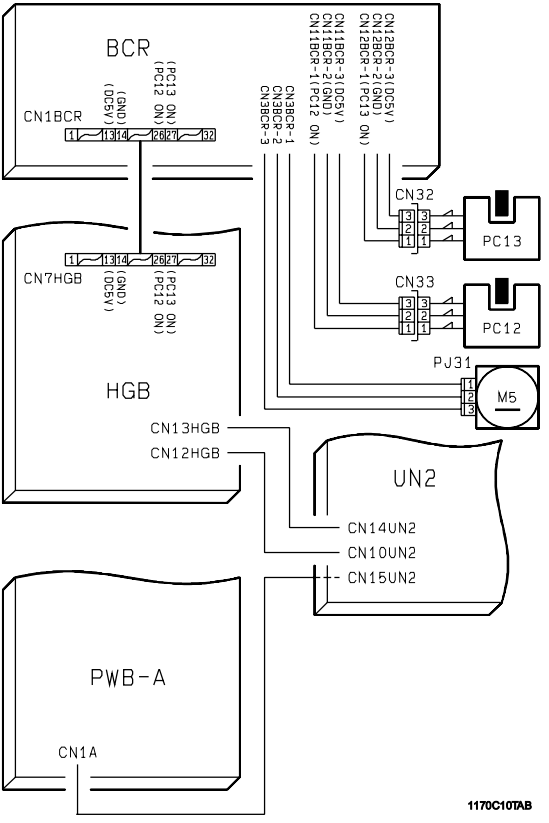
| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does H1 turn ON after the malfunction is reset? | YES | Check TH1 for contamination or installation. |
| 2 | Is there continuity across CN3-1 and 2 on the Fusing Unit end with CN3 (2P) disconnected? | NO | Check H1, TS1, and TF1 for continuity. |
| 3 | Is there continuity across 1A and 1B, and across 2A and 2B, of S3 when S3 is turned ON? | NO | Change S3. |
| 4 | Is the resistance of TH1 (across CN5-2 and 3 on the Fusing Unit end) infinity? | YES | Change TH1. |
| 5 | Is Fuse F2 on PU1 conducting? | YES | Change PU1 or PWB-A. |
| | | NO | Change the fuse. |

C0520

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Is TH1 installed properly? | NO | Install TH1 correctly. |
| 2 | Is TH1 dirty? | YES | Clean or change TH1. |
| 3 | Is the circuit across CN5-2 and 3 on the Fusing Unit end closed when CN5 (4P) is disconnected? | YES | Change TH1. |
| | | NO | Change PWB-A or PU1. |

**(3) C0650: Faulty PC12**
**C0651: Faulty PC13**

| Relevant Electrical Parts | |
|---|---|
| Scanner Home Position Sensor 1 PC12 | BCR Board BCR |
| Scanner Home Position Sensor 2 PC13 | HGB Board HGB |
| Scanner Motor M5 | MFB Board UN2 |
| Master Board PWB-A | |

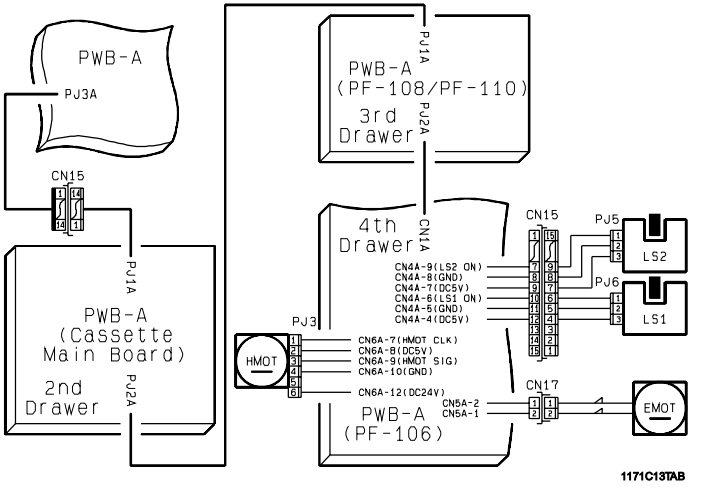


C0650, C0651

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Is M5 energized?<br>Select the following functions in this order: Tech. Rep. Mode → Movement Check → Scanner. Then, enter an appropriate value in "Absolute Position" or "Relative Position" and energize M5. | NO | Check various parts for possible overload and, if they are okay, change M5, BCR, HGB, UN2, or PWB-A, in that order. |
| 2 | Is "C0650" being displayed? | YES | Perform steps 3 and 4. |
| | | NO | Perform steps 5 and 6. |
| 3 | Does the voltage across CN11BCR-1 on BCR and GND change from DC0V to DC5V when step 1 is performed a second time and PC12 is unblocked? | NO | Change PC12. |
| 4 | Does the voltage across CN1BCR-26 on BCR and GND change from DC0V to DC5V when step 3 is performed a second time? | YES | Change HGB, UN2, or PWB-A, in that order. |
| | | NO | Change BCR. |
| 5 | Does the voltage across CN12BCR-1 on BCR and GND change from DC5V to DC0V when step 1 is performed a third time and PC13 is unblocked? | NO | Change PC13. |
| 6 | Does the voltage across CN1BCR-27 on BCR and GND change from DC0V to DC5V when step 5 is performed a second time? | YES | Change HGB, UN2, or PWB-A, in that order. |
| | | NO | Change BCR. |

**(4) C0990: EMOT Malfunction**
**C0991: Lift 1 Ascent Motion Failure**
**C0995: HMOT Malfunction**
**C0999: Lift 2 Ascent Motion Failure**
**C099D: Communications Error**

| Relevant Electrical Parts | |
|---|---|
| LCC Lift-Up Motor EMOT | LCC Main Board PWB-A: PF-106 |
| Lift-Up Sensor 1 LS1 | Cassette Main Board PWB-A: PF-108/PF-110 |
| Lift-Up Sensor 2 LS2 | Cassette Main Board PWB-A |
| LCC Transport Motor HMOT | Master Board PWB-A |



C0990

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does "C0990" reappear even after EMOT has been replaced with a new one? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |

C0991

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Is LS1 fully operational? Check the input data using I/O Check. | YES | Perform step 3 and onward. |
| 2 | Does the voltage across CN4A-6 on PWB-A (PF-106) and GND change to DC5V when LS1 is blocked and to DC0V when LS1 is unblocked? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order. |
| | | NO | Change LS1. |
| 3 | Does EMOT turn when a drawer loaded with paper is slid into the copier? | YES | Check gears and couplings for proper engagement and, if they are okay, change PWB-A. |
| 4 | Does the voltage across CN5A-1 on PWB-A (PF-106) and GND change from DC0V to DC24V when step 3 is performed again? | YES | Check various parts for possible overload and, if they are okay, change EMOT. |
| | | NO | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |

C0995

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does "C0995" reappear even after HMOT has been replaced with a new one? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |

C0999

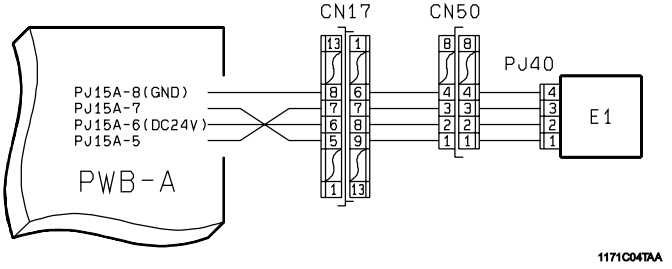
| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Is LS2 fully operational? Check the input data using I/O Check. | YES | Perform step 3 and onward. |
| 2 | Does the voltage across CN4A-9 on PWB-A (PF-106) and GND change to DC5V when LS2 is blocked and to DC0V when LS2 is unblocked? | YES | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), or PWB-A (Cassette Main Board), in that order. |
| | | NO | Change LS2. |
| 3 | Does EMOT turn when a drawer loaded with paper is slid into the copier? | YES | Check gears and couplings for proper engagement and, if they are okay, change PWB-A. |
| 4 | Does the voltage across CN5A-1 on PWB-A (PF-106) and GND change from DC0V to DC24V when step 3 is performed again? | YES | Check various parts for possible overload and, if they are okay, change EMOT. |
| | | NO | Change PWB-A (PF-106), PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |

C099D

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Does "C099D" reappear even after PWB-A (PF-106) has been replaced with a new one? | YES | Change PWB-A (PF-108/PF-110), PWB-A (Cassette Main Board), or PWB-A, in that order. |

**(5) C0F32: Faulty E1**
**C0F33: ATDC Adjustment Failure**

| Relevant Electrical Parts | |
|---|---|
| ATDC Sensor E1 | Master Board PWB-A |




C0F32, C0F33

| Step | Check Item | Result | Action |
|---|---|---|---|
| 1 | Are PJ40, CN50, CN17, and PWB-A PJ15A connected properly? | NO | Connect them properly. |
| 2 | Is the CN50 connection dirty? | YES | Clean. |
| 3 | Is "C0F32" or "C0F33" displayed even when an I/C with the same T/C as that of a new one has been installed? | NO | Change the I/C with a new one. |
| 4 | Is "C0F32" or "C0F33" displayed even when an I/C with the same T/C as that of a new one has been installed and an F8 operation run? (Be sure to record the ATDC control voltage setting value if an F8 operation is to be run.) | YES | Change PWB-A, install the old I/C, and return the ATDC control voltage setting to the value recorded. If "C0F32" or "C0F33" redisplayed, change the I/C with a new one. |
| | | NO | Change the I/C with a new one. |

### (6) C10** to C13**

- These malfunctions are concerned with faulty symptoms as they relate to software, hardware, and communications. For remedial actions, change the board, check for cable connections, and turn the Power Switch OFF and ON.

| Code | Action |
|---|---|
| C1038 | 1. Check the connection between PWB-A and UN2, reset the malfunction, and turn OFF and ON the Power Switch.<br>2. If the same malfunction persists, change PWB-A or UN2. |
| C1300 | 1. Reset the malfunction and turn OFF and ON the Power Switch.<br>2. If the same malfunction persists, check the harnesses and PJs between UN3, PH Unit, and PWB-A and, if they are intact, change UN3, PH Unit, or PWB-A, in that order. |
| C133A | 1. Reset the malfunction and turn OFF and ON the Power Switch.<br>2. If the same malfunction persists, check the connection between the copier PWB-A and A to E below:<br>A. 2nd Drawer paper source unit<br>B. 3rd Drawer paper source unit (PF-108/PF-110/PF-106)<br>C. 4th Drawer paper source unit (PF-108/PF-110/PF-106)<br>D. 5th Drawer paper source unit (PF-108/PF-110)<br>E. Job Tray (JS-200)<br>3. If the connection is made properly, unplug the connector between the copier and A to E and turn OFF and ON the Power Switch.<br>→If the malfunction code display persists, change the copier PWB-A.<br>→If the malfunction is no longer detected, connect the connectors sequentially and turn OFF and ON the Power Switch. When "C133A" is detected, check the connector of the corresponding paper source unit and, if it is intact, change the PWB-A of the unit. |
| C133B | 1. Reset the malfunction and turn OFF and ON the Power Switch.<br>2. If the same malfunction persists, check the connection between the copier PWB-A and Finisher PWB-A.<br>3. If the connection is made properly, unplug the connector between the copier and Finisher and turn OFF and ON the Power Switch.<br>→If the malfunction code display persists, change the copier PWB-A.<br>→If the malfunction is no longer detected, check the connector and, if it is intact, change the Finisher PWB-A. |
| C13C0 | 1. Reset the malfunction, turn OFF and ON the Power Switch, and reinstall the I/C.<br>2. If the malfunction is detected again, check the terminal block for the I/C fuse and HV1 and, if it is intact, change HV1 or PWB-A. |
| C13D0 | 1. Reset the malfunction, turn OFF and ON the Power Switch, and unplug the power cord and plug it back in.<br>2. If the malfunction is detected again, check the connection between IC3 on PWB-A and the EEPROM and, if it is good, change PWB-A.<br>3. If the malfunction is still detected, change the EEPROM.<br>* For the precautions to be observed when replacing the EEPROM, see DIS/REASSEMBLY, ADJUSTMENT. |
| C13F0 | 1. Reset the malfunction and turn OFF and ON the Power Switch.<br>2. If the same malfunction persists, check the harnesses and PJs between UN3, PH Unit, and PWB-A and, if they are intact, change UN3, PH Unit, or PWB-A, in that order. |

**(7) The Copier does not Turn ON.**

| Relevant Electrical Parts | |
|---|---|
| Power Switch S1 | Master Board PWB-A |
| Side Cover Interlock Switch 1 S2 | Control Panel UN1 |
| Power Supply Unit 1 PU1 | MFB Board UN2 |
| Power Supply Unit 2 PU2 | |

| Symptom | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Power does not turn ON. | 1 | Is there an AC power supply voltage across PJ1PU1-1 and 3 on PU1 when S1 is turned ON? | NO | Check S1, PU1 fuse, and power supply voltage. |
| | 2 | Is the voltage across PJ5PU1-10 and GND DC5V when S1 is turned ON? | YES | Check the fuse on PWB-A. |
| | | | NO | Change PU1. |
| | 3 | Is the voltage across PJ5PU1-4 and GND DC24V when S1 is turned ON? | NO | Change PU1. |
| | 4 | Is the voltage across PJ5PU1-3 and GND DC24V when S1 is turned ON? | NO | Change PU1. |
| | 5 | Does the voltage across the S2 connector (yellow) and GND change from DC0V to DC24V when S2 is turned ON? | NO | Check S2. |
| | 6 | Is the voltage across PJ7PU1-9 on PU1 and GND DC3.3V? | NO | Change PU1. |
| | 7 | Is the voltage across CN1PU2-1 on PU2 and GND DC24V? | NO | Change PU1. |
| | 8 | Is the voltage across CN28UN2-8 on UN2 and GND DC-12V? | NO | Change PU2. |
| | 9 | Is the voltage across CN28UN2-7 on UN2 and GND DC12V? | YES | Change PWB-A. |
| | | | NO | Change PU2. |
| The control panel indicates nothing. | 1 | Is DC24V being output from UN2 to UN1?<br>Disconnect CN1UN1 of UN1 and check to see if the voltage across CN1UN1-1 on the harness side and GND is DC24V. | NO | Change UN2. |
| | 2 | Is DC5V being output from UN2 to UN1?<br>Disconnect CN1UN1 of UN1 and check to see if the voltage across CN1UN1-28 on the harness side and GND, and across CN1UN1-29 and GND, is DC5V. | YES | Change UN1. |
| | | | NO | Change UN2. |

# 5 IMAGE FAILURE

## 5-1. Image Failure Troubleshooting

Image failures have many possible causes. For troubleshooting, it is necessary to determine whether a failure is attributable to:
1. A basic cause or any other cause
2. The input system (IR) or output system (engine).

In this chapter, troubleshooting is divided into "initial checks" and "troubleshooting procedures classified by image failures." If an image failure has occurred, first make the initial checks, then proceed to the corresponding image failure troubleshooting procedure.

## 5-2. Initial Checks

1. Place of installation
- Is the source voltage normal? Does the voltage vary greatly?
- Is the copier installed in a hot, humid place where temperature varies sharply?
- Is the copier installed in a dusty place?
- Is the copier subjected to direct sunlight?
- Is the copier level?

2. Copy paper
- Is the recommended paper used?
- Is the paper damp?
- Does the paper size set in the paper source match the size of the paper loaded in it?

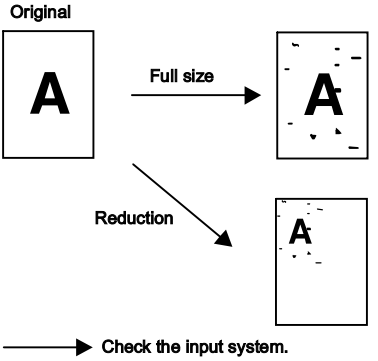
3. Original
- Is the original written in light pencil?
  → Use the test chart to check the image.
- Is the original transparent, or are transparencies being used?
  → Place a blank sheet of paper over the original and make a copy.
- Is the Original Glass dirty or scratched?
  → Clean a dirty glass, or replace a scratched one.

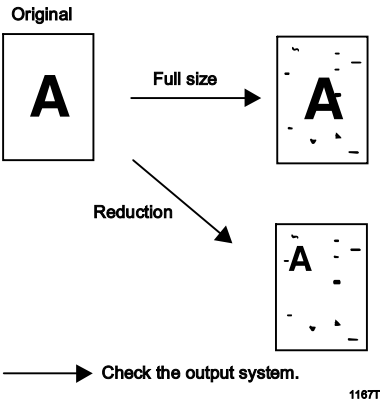
4. Adjust data and Level History data
- Do the values set for "Adjust" and "Level History" fall within the specified range?

5. PM parts (supplies)
- Have the PM parts (supplies), such as the PC Drum, Cleaning Blade, and other parts that affect image quality, reached the end of their cleaning or replacement cycle?
- Are two or more imaging cartridges being used alternately?

6. Adjustment items (registration, focus, etc.)
- Among the adjustment items given in DIS/REASSEMBLY, ADJUSTMENT, is there any adjustment that may remedy the image failure?

7. Input system (IR) or output system (engine)?
- Run "F12" which can be selected as follows: Tech. Rep. Mode → Function.
- If the test pattern output has the same problem as the copy image:
  → Check the output system.
- If the test pattern output is normal:
  → Check the input system.
- Make a copy at a different zoom ratio.



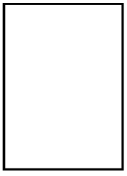




1167T020AB

## 5-3. Troubleshooting Procedures by Image Failure

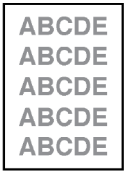
<Image Failure Samples>

1. Blank copy

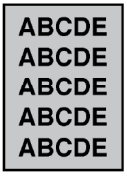


2. Black copy

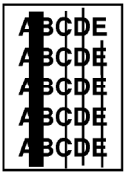
3. Low image density



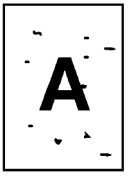

4. Foggy background



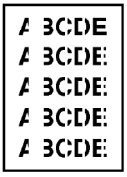

5. Black streaks or bands



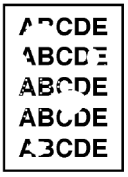
6. Black spots



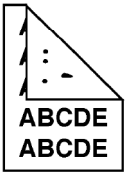

7. Blank streaks or bands



8. Void areas

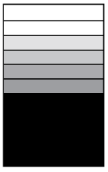


9. Smear on back




10. Uneven image density

11. Gradation reproduction failure



12. Rough image

13. Periodically uneven image

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**(1) Blank Copy**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is toner empty? | YES | Check Sub Hopper Toner Empty Switch S4 and change the Toner Bottle. |
| | 2 | Is the drive transmission mechanism to the Developing Unit in good condition? | NO | Check and change as necessary. |
| | 3 | Is the image transfer current terminal intact? | NO | Check and change as necessary. |
| | 4 | Does the laser shutter (the one located on the laser beam path between the PH Unit and PC Drum) open and close properly? | NO | Adjust so that the shutter opens and closes properly. |
| | 5 | Does the I/C Shutter open and close properly? | YES | Change HV1, PH Unit, or PWB-A, in that order. |
| | | | NO | Adjust so that the shutter opens and closes properly. |
| IR | 1 | Is the Scanner drive transmission mechanism in good condition? | NO | Check and change as necessary. |
| | 2 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 3 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(2) Black Copy**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the PC Drum charge voltage terminal in good condition? | NO | Check and change as necessary. |
| | 2 | Is the grid voltage terminal in good condition? | NO | Check and change as necessary. |
| | 3 | Is the developing bias terminal in good condition? | NO | Check and change as necessary. |
| | 4 | Does a black copy persist even after the I/C has been replaced with a new one? | YES | Change HV1 or PWB-A. |
| IR | 1 | Does the Exposure Lamp turn ON when "ON" is selected for "Lighting Exposure Lamp"? "Lighting Exposure Lamp" can be selected as follows: Tech. Rep. Mode → Movement Check → Scanner. | YES | Perform steps 4 and onward. |
| | | | NO | Check connectors and harnesses and perform steps 2 and 3. |
| | 2 | Does the voltage across CN13BCR-1 on BCR and GND change from DC24V to DC0V when step 1 is performed again? | NO | Change BCR, HGB, or UN2, in that order. |
| | 3 | Is an AC voltage output from INV to Exposure Lamp when step 1 is performed again? | YES | Change LA2. |
| | | | NO | Change INV. |
| | 4 | Are the mirrors and lens installed properly? | NO | Install them properly. |
| | 5 | Are the mirrors and lens dirty? | YES | Clean or change. |

**(3) Low Image Density**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Does the image get better when a copy is made with new paper loaded? | YES | Change the paper. Instruct the user on the storage of paper. |
| | 2 | Is toner empty? | YES | Check Sub Hopper Toner Empty Switch S4 and change the Toner Bottle. |
| | 3 | Is the image transfer current terminal intact? | NO | Check and change as necessary. |
| | 4 | Is the developing bias terminal intact? | NO | Check and change as necessary. |
| | 5 | Does the image density remain low even after the I/C has been replaced with a new one? | NO | This completes the procedure. |
| | 6 | Does the image density become higher when the "Image Density" value is changed toward the plus side? "Image Density" can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer. | YES | This completes the procedure. |
| | 7 | Does the image density become higher when the "VG Adjust" value is changed toward the plus side? "VG Adjust" can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer. | YES | This completes the procedure. |
| | | | NO | Change HV1, HGB, or UN2, in that order. |
| IR | 1 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 2 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(4) Foggy Background**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| —— | 1 | Is sunlight or any other extraneous light entering the copier? | YES | Protect the copier from extraneous light. |
| Engine | 1 | Is the PC Drum dirty with foreign matter? | YES | Clean the PC Drum. |
| | 2 | Is the PC Drum charge voltage terminal in good condition? | NO | Check and change as necessary. |
| | 3 | Is the grid voltage terminal in good condition? | NO | Check and change as necessary. |
| | 4 | Is the developing bias terminal in good condition? | NO | Check and change as necessary. |
| | 5 | Is the Charge Neutralizing Sheet voltage terminal in good condition? | NO | Check and change as necessary. |
| | 6 | Is Eraser Lamp LA1 dirty? | YES | Clean. |
| | 7 | Does foggy background persist even after the I/C has been replaced with a new one? | NO | This completes the procedure. |
| | 8 | Does foggy background persist when the "Image Density" value is changed toward the minus side? "Image Density" can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer. | NO | This completes the procedure. |
| | 9 | Does foggy background persist when the "VG Adjust" value is changed toward the minus side? "VG Adjust" can be selected as follows: Tech. Rep. Mode → Tech. Rep. Choice → Printer. | YES | Change HV1, PH Unit, or PWB-A, in that order. |
| | | | NO | This completes the procedure. |
| IR | 1 | Are the mirrors and lens dirty? | YES | Clean or change. |
| | 2 | Is the Exposure Lamp dirty or deteriorated? | YES | Clean or change. |
| | 3 | Do the connections between the Exposure Lamp and INV remain intact? | NO | Reconnect. |
| | 4 | Do the connections from INV to BCR remain intact? | NO | Reconnect. |
| | 5 | Do the connections from BCR to HGB remain intact? | NO | Reconnect. |
| | 6 | Do the connections from HGB to UN2 remain intact? | YES | Change INV, BCR, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(5) Black Streaks or Bands**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the PC Drum dirty? | YES | Clean the PC Drum. |
| | 2 | Has toner spilled from the I/C inside of the copier? | YES | Clean the interior and change I/C. |
| | 3 | Is the PC Drum charge voltage terminal in good condition? | NO | Check and change as necessary. |
| | 4 | Is the grid voltage terminal in good condition? | NO | Check and change as necessary. |
| | 5 | Are the Fusing Rollers dirty with foreign matter? | YES | Clean or change the Fusing Rollers. |
| | | | NO | Change I/C. |
| IR | 1 | Are the mirrors, lens, and Original Glass dirty with foreign matter? | YES | Clean the mirrors, lens, and Original Glass. |
| | 2 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 3 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(6) Black Spots**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the PC Drum dirty? | YES | Clean the PC Drum. |
| | 2 | Has toner spilled from the I/C inside of the copier? | YES | Clean the interior and change I/C. |
| | 3 | Is the PC Drum charge voltage terminal in good condition? | NO | Check and change as necessary. |
| | 4 | Is the grid voltage terminal in good condition? | NO | Check and change as necessary. |
| | 5 | Are the Fusing Rollers dirty with foreign matter? | YES | Clean or change the Fusing Rollers. |
| | | | NO | Change I/C. |
| IR | 1 | Are the mirrors, lens, and Original Glass dirty with foreign matter? | YES | Clean the mirrors, lens, and Original Glass. |
| | 2 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 3 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(7) Blank Streaks or Bands**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the PC Drum dirty with foreign matter? | YES | Clean the PC Drum. |
| | 2 | Is the image transfer current terminal intact? | YES | Check and change as necessary. |
| | 3 | Is the Image Transfer Roller dented or scratched? | YES | Change the Image Transfer Roller. |
| | 4 | Are the Fusing Rollers scratched or dirty? | YES | Clean or change the Fusing Rollers. |
| | 5 | Is the PH Unit window glass dirty? | YES | Clean the window glass. |
| | 6 | Is the light path between PH and PC dirty with dust? | YES | Remove dust. |
| | | | NO | Change the I/C. |
| IR | 1 | Is the Shading Sheet on the Original Glass dirty? | YES | Clean or change. |
| | 2 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 3 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(8) Void Areas**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Does the image get better when a copy is made with new paper loaded? | YES | Change the paper. Instruct the user on the storage of paper. |
| | 2 | Is the Image Transfer Roller installed correctly? | NO | Install correctly. |
| | 3 | Is the Image Transfer Roller dented or scratched? | YES | Change the Image Transfer Roller. |
| | 4 | Is the image transfer current terminal intact? | NO | Check and change as necessary. |
| | 5 | Are the Fusing Rollers scratched or deformed? | YES | Change the Fusing Rollers. |
| | | | NO | Change the I/C. |
| IR | 1 | Is the Original Glass dirty? | YES | Clean or change. |
| | 2 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 3 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(9) Smear on Back**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the Image Transfer Roller dirty? | YES | Clean or change. |
| | 2 | Has toner spilled from the I/C inside of the copier? | YES | Clean the interior and change I/C. |
| | 3 | Are the Fusing Rollers dirty? | YES | Clean or change the Fusing Rollers. |

**(10) Uneven Image Density**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the Image Transfer Roller dirty or deteriorated? | YES | Clean or change the Image Transfer Roller. |
| | 2 | Does the image get better when a copy is made with new paper loaded? | YES | Change the paper. Instruct the user on the storage of paper. |
| | | | NO | Change the I/C or PWB-A. |
| IR | 1 | Are the Original Glass, mirrors, and lens dirty with foreign matter? | YES | Clean the Original Glass, mirrors, and lens. |
| | 2 | Is the Shading Sheet on the Original Glass dirty? | YES | Clean or change. |
| | 3 | Is the Exposure Lamp dirty or deteriorated? | YES | Clean or change. |
| | 4 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 5 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(11) Gradation Reproduction Failure**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Does the image get better when a copy is made with new paper loaded? | YES | Change the paper. Instruct the user on the storage of paper. |
| | | | NO | Change PWB-A. |
| IR | 1 | Is the Shading Sheet dirty? | YES | Clean or change. |
| | 2 | Is the Original Glass dirty? | YES | Clean or change. |
| | 3 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 4 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(12) Rough Image**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the Image Transfer Roller dirty? | YES | Clean or change. |
| | 2 | Is the image transfer current terminal intact? | YES | Change HV1, I/C, PH Unit, or PWB-A, in that order. |
| | | | NO | Check and change as necessary. |
| IR | 1 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 2 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

**(13) Periodically Uneven Image**

| Section | Step | Check Item | Result | Action |
|---|---|---|---|---|
| Engine | 1 | Is the Developing Unit drive gear cracked or dirty with foreign matter? | YES | Clean or change. |
| | 2 | Is the PC Drum drive gear cracked or dirty with foreign matter? | YES | Clean or change. |
| | 3 | Is the Synchronizing Roller drive gear cracked or dirty with foreign matter? | YES | Clean or change. |
| | 4 | Is the Fusing Unit drive gear cracked or dirty with foreign matter? | YES | Clean or change. |
| | 5 | Is the PH Assy secured properly? | YES | Change the I/C or PWB-A. |
| | | | NO | Secure properly. |
| IR | 1 | Is the Scanner Motor drive gear cracked or dirty with foreign matter? | YES | Clean or change. |
| | 2 | Is the Scanner Motor secured properly? | NO | Secure properly. |
| | 3 | Is the Scanner secured properly? | NO | Secure properly. |
| | 4 | Are the Scanner Drive Cables wound properly? | NO | Wind the cables properly. |
| | 5 | Are the Scanner rails damaged or dirty with foreign matter? | YES | Clean or change. |
| | 6 | Do the connections from CCD to HGB remain intact? | NO | Reconnect. |
| | 7 | Do the connections from HGB to UN2 remain intact? | YES | Change CCD, HGB, or UN2, in that order. |
| | | | NO | Reconnect. |

# Di350 MAINTENANCE SCHEDULE

This Maintenance Schedule is intended to be used as reference information for establishing effective field service activities. To keep the copiers in as optimum a condition as possible, it is recommended that the maintenance jobs described in this schedule be carried out.

It should be noted, however, that frequency of maintenance jobs determined by the number of copies is simply a guideline. Therefore, service management personnel can revise or amend this schedule by taking into account their own individual field experiences. We feel that this will ensure more effective copier maintenance for your customers.

* This time interval (the number of copies produced) at which each component is cleaned or replaced is determined based on the average service life of the component. More or less frequent cleaning or replacement will be necessary depending on the actual image quality and paper passage performance.

NOTE: All information in this Maintenance Schedule is subject to change without prior notice.

C: Cleaning R: Replacement Unit: 1000 Copies

■ PAPER TAKE-UP/TRANSPORT SECTION

K=1,000 copies

| PM Parts | Maintenance Cycle (K) | | Parts No. | QTY | Reference Page |
|---|---|---|---|---|---|
| | Clean | Replace | | | |
| Paper Take-Up Roll | - | 120 | 1164-3001-01 | 1 | D-10 |
| Paper Dust Remover | 60 | 120 | 1165-0756-01 | 1 | D-10 |
| Side Cover | 60 | - | - | - | D-11 |
| Duplex Unit Cover | 60 | - | - | - | D-11 |

■ OPTICAL SECTION

| PM Parts | Maintenance Cycle (K) | | Parts No. | QTY | Reference Page |
|---|---|---|---|---|---|
| | Clean | Replace | | | |
| Mirrors/Lens | 120 | - | - | - | D-16 |
| Scanner Rails/Bushings | 60 | - | - | - | D-15 |
| Original Glass | 60 | - | - | 1 | D-16 |

■ IMAGE TRANSFER SECTION

| PM Parts | Maintenance Cycle (K) | | Parts No. | QTY | Reference Page |
|---|---|---|---|---|---|
| | Clean | Replace | | | |
| Image Transfer Roller | - | 150 | 1164-0335-01 | 1 | D-23 |
| Comb Electrode | 60 | - | - | 1 | D-23 |
| Pre-Image Transfer Guide Plate | 60 | - | - | 1 | D-24 |

■ DEVELOPING SECTION

| PM Parts | Maintenance Cycle (K) | | Parts No. | QTY | Reference Page |
|---|---|---|---|---|---|
| | Clean | Replace | | | |
| Imaging Cartridge | - | 72 | - | 1 | D-25 |

■ TONER HOPPER UNIT

| PM Parts | Maintenance Cycle (K) | | Parts No. | QTY | Reference Page |
|---|---|---|---|---|---|
| | Clean | Replace | | | |
| Ozone Filter | - | 100 | 1165-2031-01 *1<br>1165-2032-01 *2 | 1 | D-24 |

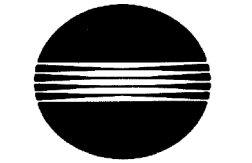
*1: Except Europe

*2: Europe

■ FUSING SECTION

K=1,000 copies

| PM Parts | Maintenance Cycle (K) | | Parts No. | QTY | Reference Page |
|---|---|---|---|---|---|
| | Clean | Replace | | | |
| Fusing Unit | - | 300 | - | 1 | D-26 |

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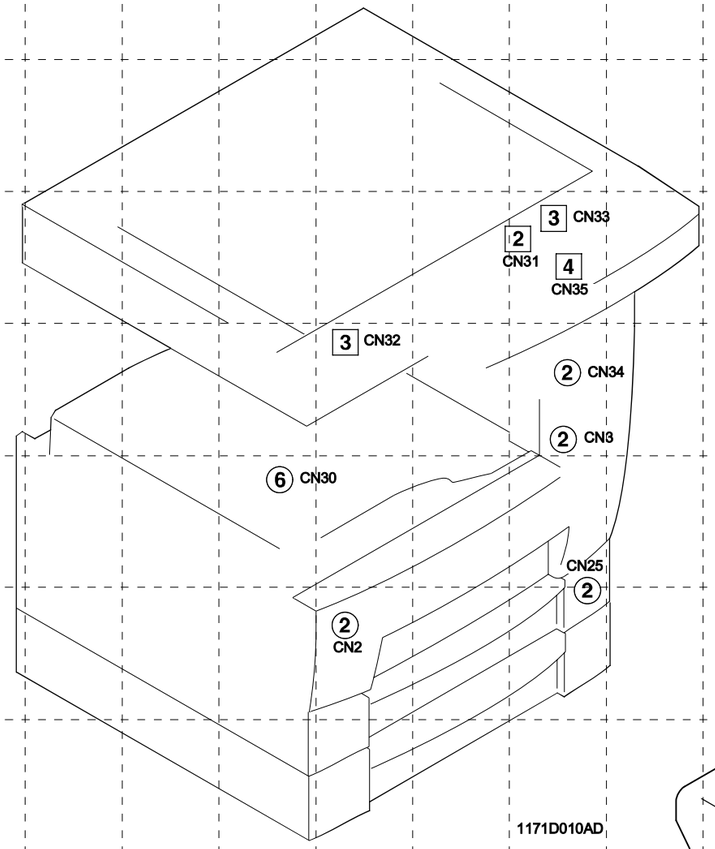
# CONNECTORS LAYOUT

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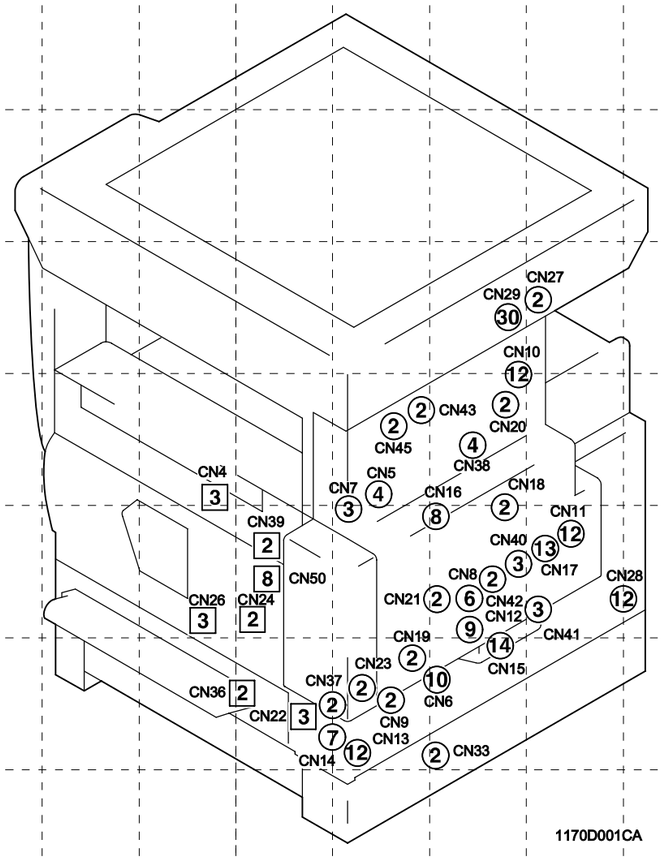



1170D001CA

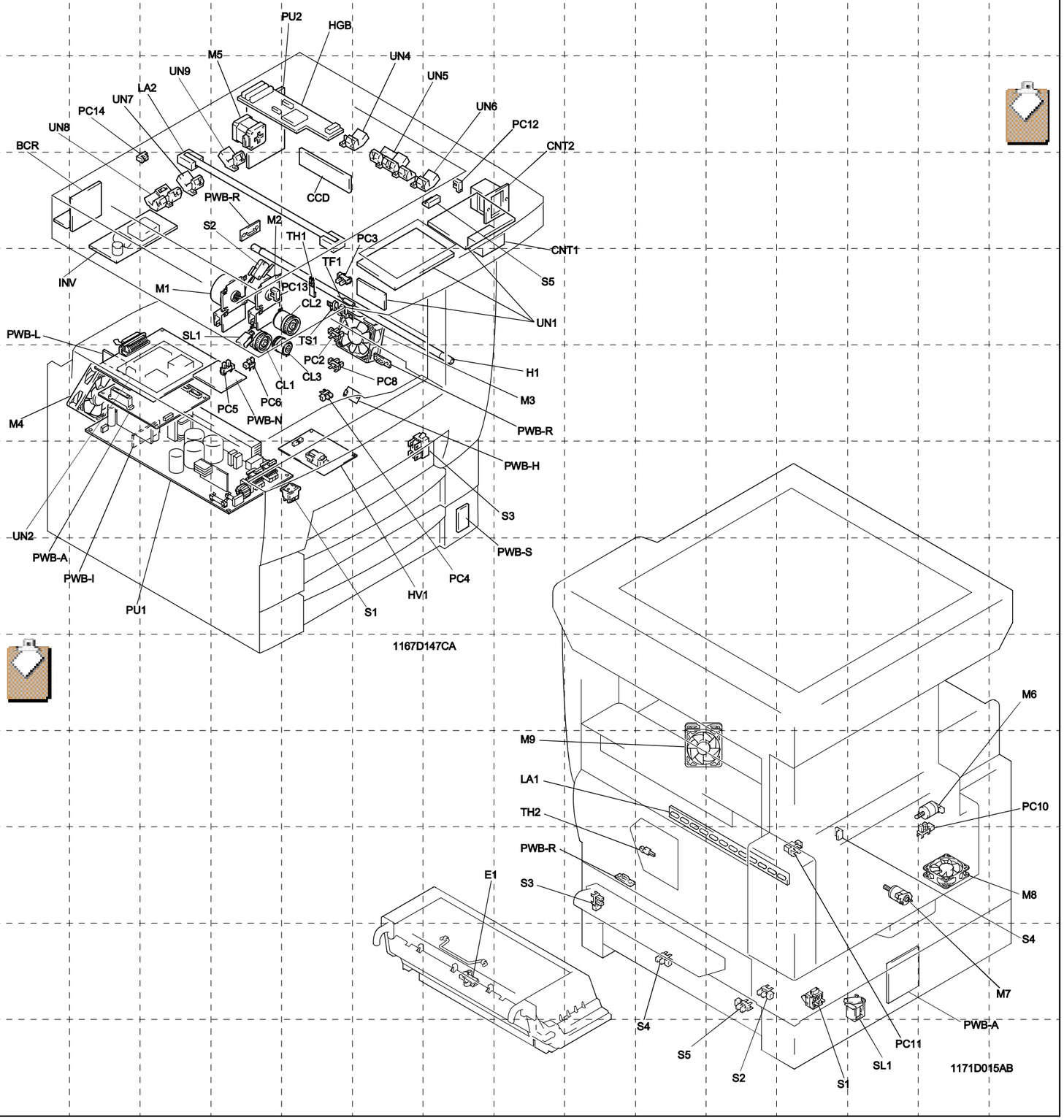
Description

Number of Pin → ① Possible to confirm by removing external cover.

Number of Pin → [1] Not possible to confirm by removing external cover.

| CN No. | | LOCATION | GRID |
|---|---|---|---|
| CN2 | 2P | 24-E | 5-F |
| CN3 | 2P | 3-C | 7-D |
| CN4 | 3P | 5-F | 10-I |
| CN5 | 4P | 2-A | 12-I |
| CN6 | 10P | 2-A~B | 13-K |
| CN7 | 3P | 2-D | 12-I~J |
| CN8 | 6P | 19-G | 13-J |
| CN9 | 2P | 19-H | 12-K |
| CN10 | 12P | 25-G | 13-H~I |
| CN11 | 12P | 2-E~F | 14-J |
| CN12 | 9P | 19-F~G | 13-J |
| CN13 | 12P | 23-H~I | 12-K |
| CN14 | 7P | 19-I | 11~12-K |
| CN15 | 14P | 21-E~F | 13-K |
| CN16 | 8P | 23-H | 13-J |
| CN17 | 13P | 2-F~G | 14-J |
| CN18 | 2P | 12-E | 13-I~J |
| CN19 | 2P | 19-H | 12-K |
| CN20 | 2P | 12-E | 13-I |
| CN21 | 2P | 5-C | 13-J |
| CN22 | 3P | 2-A~B | 11-K |
| CN23 | 2P | 22-H | 12-K |
| CN24 | 2P | 5-G | 11-J |
| CN25 | 2P | 20-G | 7-E~F |
| CN26 | 3P | 2-A~B | 10-J |
| CN27 | 2P | 25-G | 14-H |
| CN28 | 12P | 23-G | 14~15-J |
| CN29 | 30P | 25-H~I | 13-H |
| CN30 | 6P | 26-A~B | 4-E |
| CN31 | 2P | 13-E | 7-C |
| CN32 | 3P | 11-D | 5-D |
| CN33 | 3P | 11-D | 7-C |
| CN34 | 2P | 26-A | 7-D |
| CN35 | 4P | 26-B | 7-C |
| CN36 | 2P | 20-I | 10~11-K |
| CN37 | 2P | 23-I | 11~12-K |
| CN38 | 4P | 23-F~G | 23-F~G |
| CN39 | 2P | 5-E | 11-J |
| CN40 | 3P | 5-F | 13-J |
| CN41 | 3P | 5-C | 14-J |
| CN42 | 2P | 5-E | 13-J |
| CN43 | 2P | 14-F | 12-I |
| CN45 | 2P | 14-E | 12-I |
| CN50 | 8P | 5-H | 11-J |
| 500-Sheet Cassette | | | |
| CN33 | 2P | 21-F | 13-K |

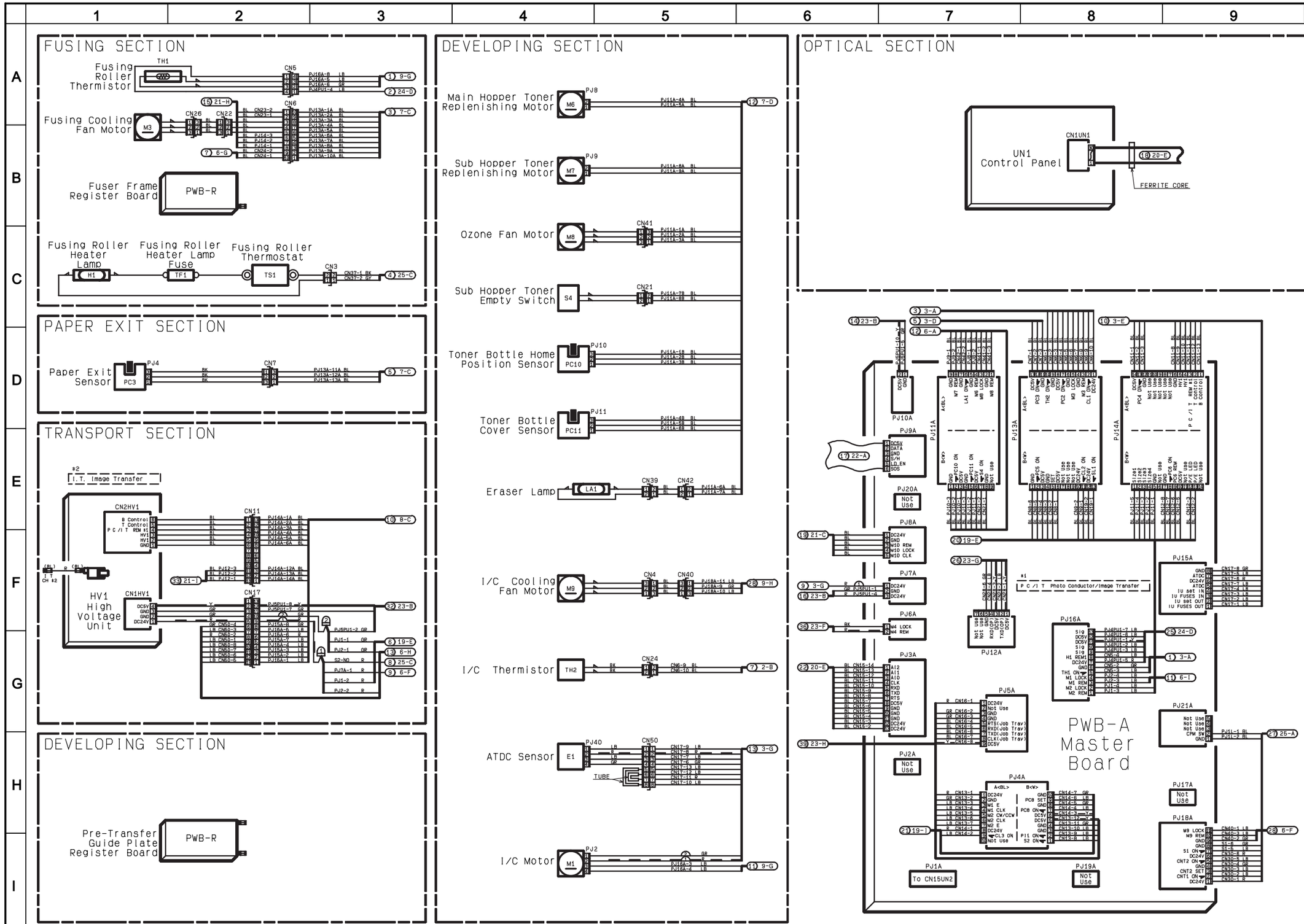
# ELECTRICAL PARTS LAYOUT

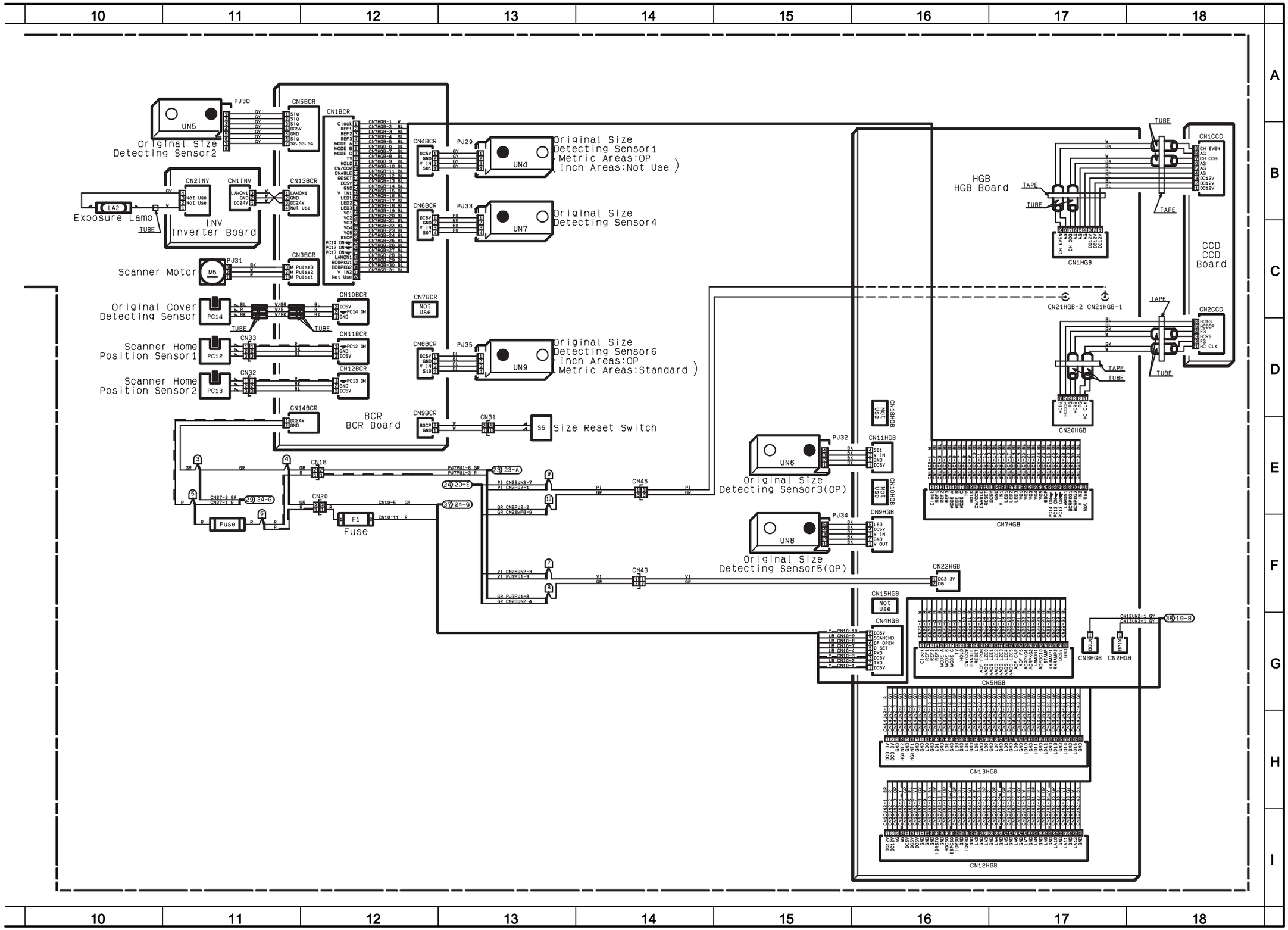


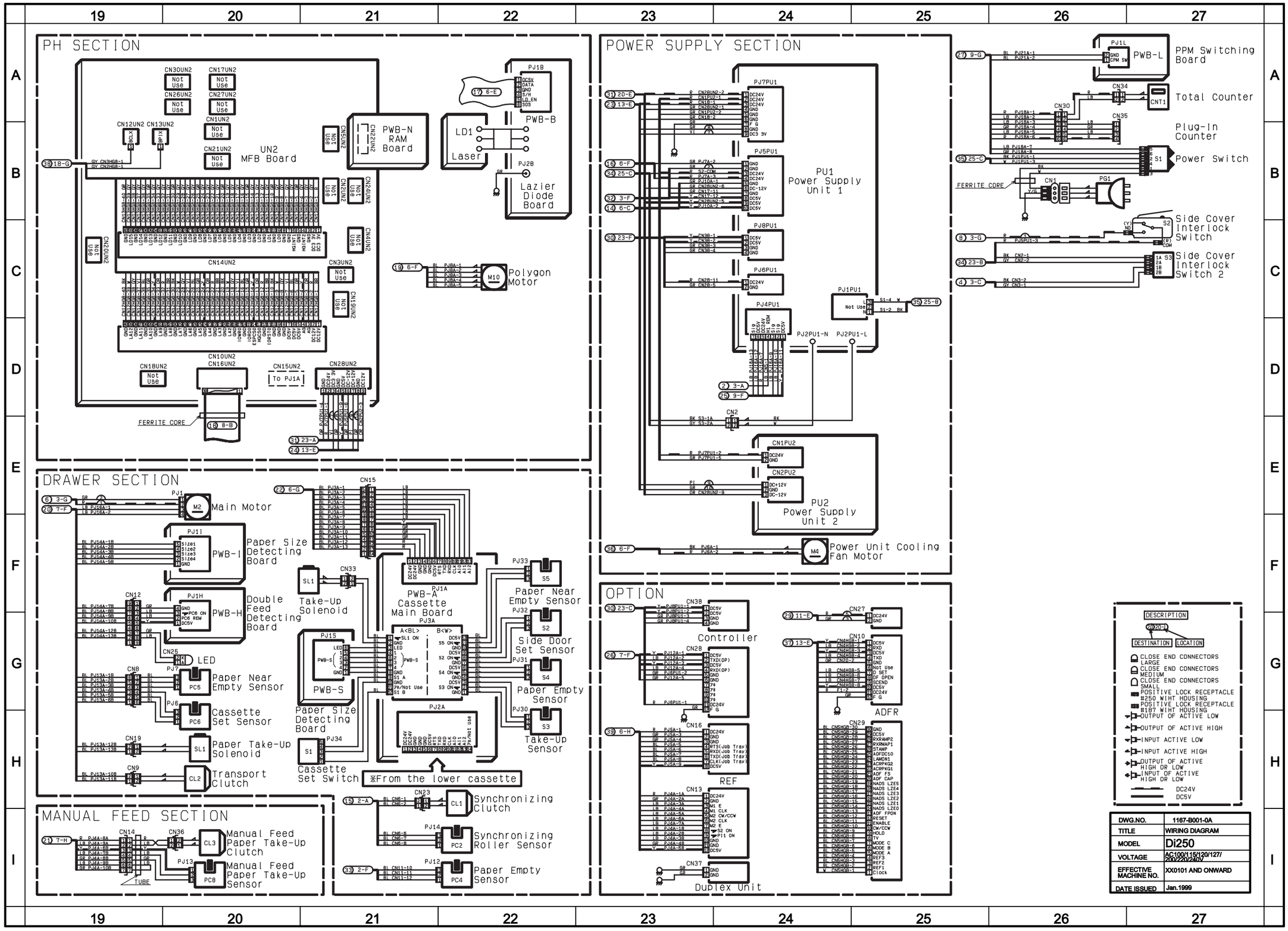

| SYMBOL | PART NAME | LOCATION | GRID |
|---|---|---|---|
| BCR | BCR Board | 11~13-A~E | 1~2-C |
| CCD | CCD Board | 18-B~D | 5-C |
| CL1 | Synchronizing Clutch | 22-H~I | 4-D~E |
| CL2 | Transport Clutch | 20-H | 4~5-D |
| CL3 | Manual Feed Paper Take-Up Clutch | 20-I | 4~5-D~E |
| CNT1 | Total Counter | 27-A | 7~8-C~D |
| CNT2 | Plug-In Counter | —— | 7~8-C |
| E1 | ATDC Sensor | 4-H | 7-K |
| H1 | Fusing Roller Heater Lamp | 1-C | 4~7-D~E |
| HV1 | High Voltage Unit | 1-E~G | 5-E~F |
| HGB | HGB Board | 16~18-B~I | 4~5-B |
| INV | Inverter Board | 11-B~C | 2~3-C~D |
| LA1 | Eraser Lamp | 4~5-E | 10~12-I~J |
| LA2 | Exposure Lamp | 10-B | 3~5-C |
| LD1 | Laser ✱1 | —— | —— |
| M1 | I/C Motor | 4-I | 4-D |
| M2 | Main Motor | 20-E~F | 4-D |
| M3 | Fusing Cooling Fan Motor | 1-A~B | 5~6-D~E |
| M4 | Power Unit Cooling Fan Motor | 24-F | 2-E |
| M5 | Scanner Motor | 11-C | 4-B |
| M6 | Main Hopper Toner Replenishing Motor | 4-A | 14-I |
| M7 | Sub Hopper Toner Replenishing Motor | 4-B | 13-J |
| M8 | Ozone Fan Motor | 4-C | 14-J |
| M9 | I/C Cooling Fan Motor | 4-F | 10~11-H~I |
| M10 | Polygon Motor ✱1 | —— | —— |
| PC2 | Synchronizing Roller Sensor | 22-I | 5-D |
| PC3 | Paper Exit Sensor | 1-D | 5-D |
| PC4 | Paper Empty Sensor | 22-I | 5-E |
| PC5 | Paper Near Empty Sensor | 20-G | 4-E |
| PC6 | Cassette Set Sensor | 20-G~H | 4-E |
| PC8 | Main Feed Paper Take-Up Sensor | 20-I | 5-E |
| PC10 | Toner Bottle Home Position Sensor | 4-D | 14-I~J |
| PC11 | Toner Bottle Cover Sensor | 4-D~E | 12-J |
| PC12 | Scanner Home Position Sensor 1 | 11-D | 7-C |
| PC13 | Scanner Home Position Sensor 2 | 11-D | 4-D |
| PC14 | Original Cover Detecting Sensor | 11-C | 2~3-C |
| PU1 | Power Supply Unit 1 | 24~25-A~D | 2~4-E~F |
| PU2 | Power Supply Unit 2 | 24~25-E~F | 4-B~C |
| PWB-A | Master Board | 6~9-D~I | 2~3-E |
| PWB-B | Laser Diode Board ✱1 | —— | —— |
| PWB-H | Double Feed Detecting Board | 20-F~G | 5~6-E |
| PWB-I | Paper Size Detecting Board | 20-F | 2~3-E~F |
| PWB-L | PPM Switching Board | 26~27-A | 2-E |

| SYMBOL | PART NAME | LOCATION | GRID |
|---|---|---|---|
| PWB-N | RAM Board | 21-A~B | 3~4-E |
| PWB-R | Fuser Frame Register Board | 1~2-B | 4-C |
| PWB-R | Pre-Transfer Guide Plate Register Board 1 | 1~2-I | 6-E |
| PWB-R | Pre-Transfer Guide Plate Register Board 2 | 1~2-I | 9-J |
| S1 | Power Switch | 27-B | 5-F |
| S2 | Side Cover Interlock Switch 1 | 27-B~C | 4-D |
| S3 | Side Cover Interlock Switch 2 | 27-C | 6~7-E~F |
| S4 | Sub Hopper Toner Empty Switch | 4-C | 12-J |
| S5 | Size Reset Switch | 13-D~E | 7-C |
| SL1 | Paper Take-Up Solenoid | 20-H | 4-D |
| TF1 | Fusing Roller Heater Lamp Fuse | 2-C | 5-D |
| TH1 | Fusing Roller Thermistor | 1~2-A | 5-D |
| TH2 | I/C Thermistor | 4-G | 10-J |
| TS1 | Fusing Roller Thermostat | 2-C | 5-D |
| UN1 | Control Panel | 7~8-A~B | 6~8-C~D |
| UN2 | MFB Board | 19~21-A~D | 2~3-D~E |
| UN4 | Original Size Detecting Sensor 1 (Option) ✱2 | 13-B | 5~6-B |
| UN5 | Original Size Detecting Sensor 2 | 10~11-A~B | 6-C |
| UN6 | Original Size Detecting Sensor 3 (Option) | 15-E | 6~7-C |
| UN7 | Original Size Detecting Sensor 4 | 13-B~C | 3-C |
| UN8 | Original Size Detecting Sensor 5 (Option) | 15-E~F | 3-C |
| UN9 | Original Size Detecting Sensor 6 ✱3 | 13-D | 4-C |
| 500-Sheet Cassette | | | |
| PWB-A | Cassette Main Board | 21~22-F~H | 13-K |
| PWB-S | Paper Size Detecting Board | 21-G | 7-F |
| S1 | Cassette Set Switch | 21-H | 12-K |
| S2 | Side Door Set Sensor | 22-F~G | 11-K |
| S3 | Take-Up Sensor | 22-G~H | 9-J |
| S4 | Paper Empty Sensor | 22-G | 10-K |
| S5 | Paper Near Empty Sensor | 22-F | 11-K |
| SL1 | Take-Up Solenoid | 21-F | 13-K |

✱1: Components used in the PH Unit
✱2: Metric Areas Only
✱3: Standard for the Metric Areas
Optional for the Inch Areas

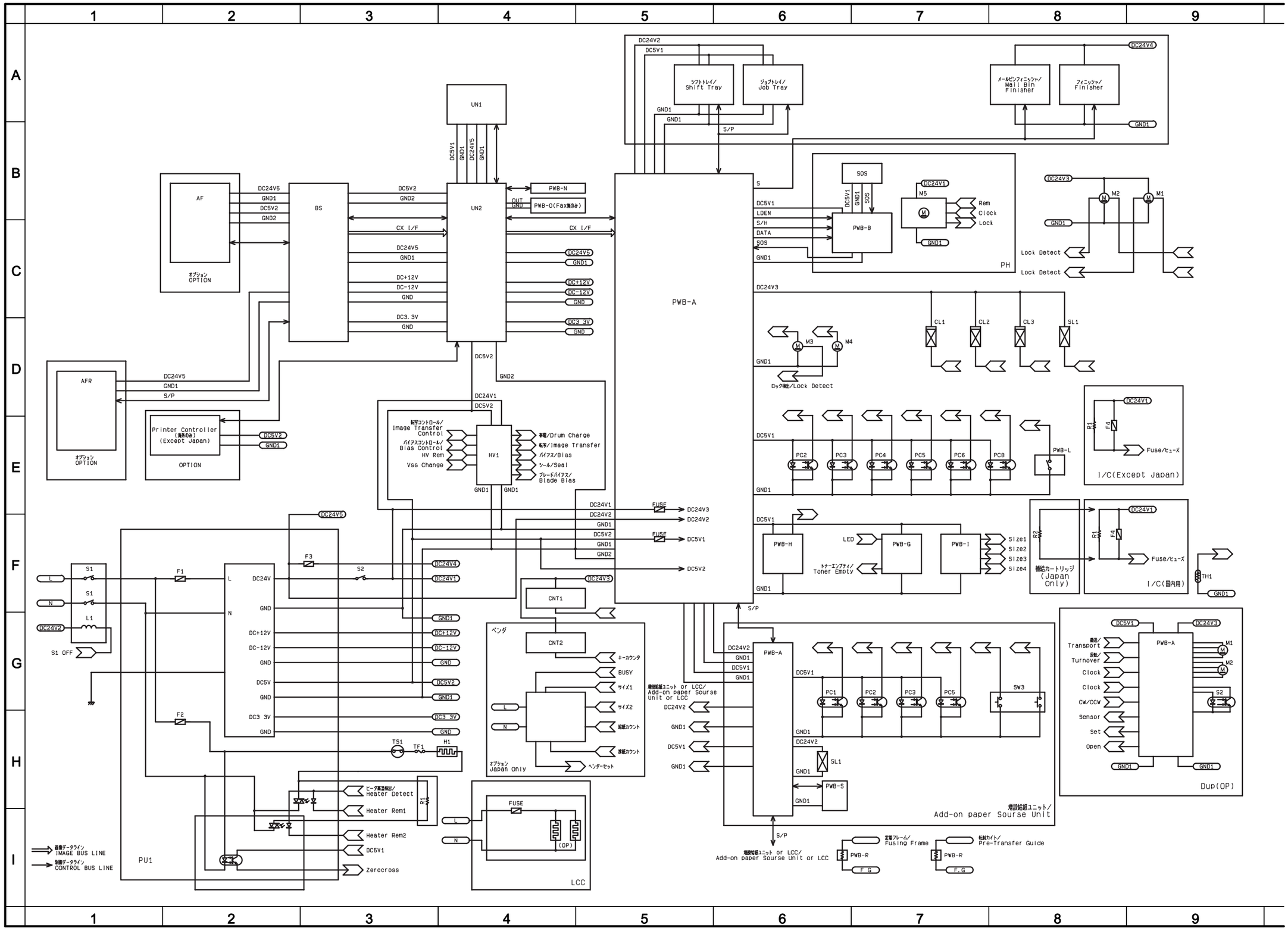

FUSING SECTION
Fusing Roller Thermistor
TH1
CN5
1 9-G
2 24-D
Fusing Cooling Fan Motor
M3
CN26
CN22
15 21-H
CN6
3 7-C
7 6-G
Fuser Frame Register Board
PWB-R
Fusing Roller Heater Lamp
H1
Fusing Roller Heater Lamp Fuse
TF1
Fusing Roller Thermostat
TS1
CN3
4 25-C
PAPER EXIT SECTION
Paper Exit Sensor
PC3
PJ4
CN7
5 7-C
TRANSPORT SECTION
#2
I.T. Image Transfer
CN2HV1
B Control
T Control
P C / I T REM #1
HV1
HV1
GND
CN11
10 8-C
33 21-I
CN17
HV1 High Voltage Unit
CN1HV1
DC5V
GND
DC24V
32 23-B
6 19-E
13 6-H
8 25-C
9 6-F
DEVELOPING SECTION
Pre-Transfer Guide Plate Register Board
PWB-R
DEVELOPING SECTION
Main Hopper Toner Replenishing Motor
M6
PJ8
12 7-D
Sub Hopper Toner Replenishing Motor
M7
PJ9
Ozone Fan Motor
M8
CN41
Sub Hopper Toner Empty Switch
S4
CN21
Toner Bottle Home Position Sensor
PC10
PJ10
Toner Bottle Cover Sensor
PC11
PJ11
Eraser Lamp
LA1
CN39
CN42
I/C Cooling Fan Motor
M9
CN4
CN40
28 9-H
I/C Thermistor
TH2
CN24
7 2-B
ATDC Sensor
E1
PJ40
CN50
13 3-G
TUBE
I/C Motor
M1
PJ2
11 9-G
OPTICAL SECTION
UN1
Control Panel
CN1UN1
18 20-E
FERRITE CORE
PWB-A
Master
Board
3 3-A
5 3-D
12 6-A
10 3-E
14 23-B
PJ10A
PJ9A
17 22-A
PJ11A
PJ13A
PJ14A
PJ20A
Not Use
PJ8A
19 21-C
PJ7A
9 3-G
16 23-B
PJ6A
36 23-F
PJ3A
22 20-E
39 23-H
PJ2A
Not Use
20 19-E
26 23-G
PJ12A
PJ5A
PJ4A
21 19-I
PJ1A
To CN15UN2
PJ19A
Not Use
*1
P C / I T Photo Conductor/Image Transfer
PJ15A
PJ16A
25 24-D
1 3-A
11 6-I
PJ21A
Not Use
27 25-A
PJ17A
Not Use
PJ18A
28 6-F


Original Size
Detecting Sensor2
UN5
PJ30
CN5BCR
CN1BCR
CN2INV
CN1INV
CN13BCR
LA2
Exposure Lamp
TUBE
INV
Inverter Board
Scanner Motor
M5
PJ31
CN3BCR
Original Cover
Detecting Sensor
PC14
CN10BCR
CN7BCR
Not Use
Scanner Home
Position Sensor1
PC12
CN33
CN11BCR
Scanner Home
Position Sensor2
PC13
CN32
CN12BCR
CN14BCR
BCR
BCR Board
CN9BCR
CN31
S5
Size Reset Switch
CN4BCR
PJ29
UN4
Original Size
Detecting Sensor1
( Metric Areas:OP
Inch Areas:Not Use )
CN6BCR
PJ33
UN7
Original Size
Detecting Sensor4
CN8BCR
PJ35
UN9
Original Size
Detecting Sensor6
( Inch Areas:OP
Metric Areas:Standard )
PJ32
UN6
Original Size
Detecting Sensor3(OP)
PJ34
UN8
Original Size
Detecting Sensor5(OP)
CN18
CN20
F1
Fuse
CN45
CN43
CN22HGB
CN15HGB
Not Use
CN4HGB
CN5HGB
CN13HGB
CN12HGB
CN11HGB
CN9HGB
CN10HGB
CN1HGB
CN20HGB
CN7HGB
HGB
HGB Board
CN1CCD
CN2CCD
CCD
CCD
Board
CN21HGB-2
CN21HGB-1
CN12UN2-1
CN11UN2-1
CN3HGB
CN2HGB
TAPE
TUBE




| | |
|---|---|
| DWG.NO. | 1167-B001-0A |
| TITLE | WIRING DIAGRAM |
| MODEL | Di250 |
| VOLTAGE | AC100/115/120/127/200/220/240V |
| EFFECTIVE MACHINE NO. | XX0101 AND ONWARD |
| DATE ISSUED | Jan.1999 |

| | |
|---|---|
| DWG.NO. | 1167-B201-0A |
| TITLE | CIRCUIT DIAGRAM PWB-A |
| MODEL | Di250 |
| VOLTAGE | AC100/115/120/127/ 200/220/240V |
| EFFECTIVE MACHINE NO. | XX0101 AND ONWARD |
| DATE ISSUED | Jan.1999 |


UN1
UN2
PWB-N
PWB-O(Fax無のみ)
AF
オプション
OPTION
BS
AFR
Printer Controller
(英語のみ)
(Except Japan)
PWB-A
PWB-B
PWB-H
PWB-G
PWB-I
PWB-L
PWB-S
PH
HV1
転写コントロール/
Image Transfer
Control
バイアスコントロール/
Bias Control
HV Rem
Vss Change
帯電/Drum Charge
転写/Image Transfer
バイアス/Bias
シール/Seal
ブレードバイアス/
Blade Bias
シフトトレイ/
Shift Tray
ジョブトレイ/
Job Tray
メールビンフィニッシャ/
Mail Bin
Finisher
フィニッシャ/
Finisher
Rem
Clock
Lock
Lock Detect
ロック検出/Lock Detect
CL1
CL2
CL3
SL1
M1
M2
M3
M4
PC1
PC2
PC3
PC4
PC5
PC6
PC8
SW3
SOS
LED
トナーエンプティ/
Toner Empty
Size1
Size2
Size3
Size4
補給カートリッジ
(Japan
Only)
I/C(Except Japan)
I/C(国内用)
Fuse/ヒューズ
Dup(OP)
ベンダ
キーカウンタ
BUSY
サイズ1
サイズ2
給紙カウント
排紙カウント
ベンダーセット
CNT1
CNT2
S1
S2
F1
F2
F3
L1
S1 OFF
TS1
TF1
H1
R1
R2
F4
TH1
Heater Detect
Heater Rem1
Heater Rem2
Zerocross
(OP)
LCC
PU1
増設給紙ユニット/
Add-on paper Sourse
Unit or LCC
増設給紙ユニット/
Add-on paper Sourse Unit
Add-on paper Sourse Unit
定着フレーム/
Fusing Frame
転送ガイド/
Pre-Transfer Guide
PWB-R
F.G
搬送/
Transport
反転/
Turnover
Clock
CW/CCW
Sensor
Set
Open
画像データライン
IMAGE BUS LINE
制御データライン
CONTROL BUS LINE
DC24V1
DC24V2
DC24V3
DC24V4
DC24V5
DC5V1
DC5V2
DC+12V
DC-12V
DC3.3V
GND
GND1
GND2
S/P
FUSE
CX I/F

| | | |
|---|---|---|
| BCR | BCR基板 | BCR Board |
| CCD | CCD基板 | CCD Board |
| CL1 | タイミングクラッチ | Synchronizing Clutch |
| CL2 | 搬送クラッチ | Transport Clutch |
| CL3 | 手差し給紙クラッチ | Manual Feed Paper Take-Up Clutch |
| CNT1 | トータルカウンタ | Total Counter |
| CNT2 | キーカウンタ | Plug-In Counter |
| H1 | 定着ヒータランプ | Fusing Roller Heater Lamp |
| HGB | HGB基板 | HGB Board |
| HV1 | 高圧ユニット | High Voltage Unit |
| INV | インバータ基板 | Inverter Board |
| LA2 | 露光ランプ | Exposure Lamp |
| LD1 | レーザ | Laser |
| M1 | I/Cモータ | I/C Motor |
| M2 | メインモータ | Main Motor |
| M3 | 定着冷却ファンモータ | Fusing Cooling Fan Motor |
| M4 | 電源冷却ファンモータ | Power Unit Cooling Fan Motor |
| M5 | スキャナモータ | Scanner Motor |
| M10 | ポリゴンモータ | Polygon Motor |
| NCUI | NCUI基板 | NCUI Board |
| PC2 | タイミングローラ前センサ | Synchronizing Roller Sensor |
| PC3 | 排紙センサ | Paper Exit Sensor |
| PC4 | ペーパーエンプティセンサ | Paper Empty Sensor |
| PC5 | ペーパーニアエンプティセンサ | Paper Near Empty Sensor |
| PC6 | 給紙カセットセットセンサ | Cassette Set Sensor |
| PC8 | 手差し給紙センサ | Manual Feed Paper Take-Up Sensor |
| PC12 | スキャナ定位置センサ1 | Scanner Home Position Sensor1 |
| PC13 | スキャナ定位置センサ2 | Scanner Home Position Sensor2 |
| PC14 | 原稿カバー角度検出センサ | Original Cover Detecting Sensor |
| PU1 | 直流安定化電源1 | Power Supply Unit1 |
| PU2 | 直流安定化電源2 | Power Supply Unit2 |
| PWB-A | マスタ基板 | Master Board |
| PWB-B | レーザダイオード基板 | Laser Diode Board |
| PWB-G | トナーエンプティ検出基板 | Toner Empty Detecting Board |
| PWB-H | ダブルフィード検出センサ基板 | Double Feed Detecting Board |
| PWB-I | ペーパーサイズ検出基板 | Paper Size Detecting Board |
| PWB-L | PPM切り換え基板 | PPM Switching Board |
| PWB-N | RAM基板 | RAM Board |
| PWB-O | 電池基板 | ———————————— |
| PWB-R | 定着フレーム抵抗基板 | Fuser Flame Register Board |
| PWB-R | 転写前ガイド抵抗基板1/2 | Pre-Transfer Guide Plate Register Board 1/2 |
| S1 | メインスイッチ | Power Switch |
| S2 | サイドカバー安全スイッチ1 | Side Cover Interlock Switch1 |
| S5 | サイズリセットスイッチ | Size Reset Switch |
| SL1 | 給紙ソレノイド | Paper Take-Up Solenoid |
| TF1 | 定着温度ヒューズ | Fusing Roller Heater Lamp Fuse |
| TH1 | 定着サーミスタ | Fusing Roller Thermistor |
| TS1 | 定着サーモスタット | Fusing Roller Thermostat |
| UN1 | 操作パネル | Control Panel |
| UN2 | MFB基板 | MFB Board |
| UN4 | 原稿サイズ検出センサ1 | Original Size Detecting Sensor1 |
| UN5 | 原稿サイズ検出センサ2 | Original Size Detecting Sensor2 |
| UN6 | 原稿サイズ検出センサ3 | Original Size Detecting Sensor3 |
| UN7 | 原稿サイズ検出センサ4 | Original Size Detecting Sensor4 |
| UN8 | 原稿サイズ検出センサ5 | Original Size Detecting Sensor5 |
| UN9 | 原稿サイズ検出センサ6 | Original Size Detecting Sensor6 |
| | | |
| | 海外仕向けのみ/Except Japan Only | |
| E1 | ———————— | ATDC Sensor |
| LA1 | ———————— | Eraser Lamp |
| M6 | ———————— | Main Hopper Toner Replenishing Motor |
| M7 | ———————— | Sub Hopper Toner Replenishing Motor |
| M8 | ———————— | Ozone Fan Motor |
| M9 | ———————— | I/C Cooling Fan Motor |
| PC10 | ———————— | Toner Bottle Home Position Sensor |
| PC11 | ———————— | Toner Bottle Cover Sensor |
| S3 | ———————— | Side Cover Interlock Switch 2 |
| S4 | ———————— | Sub Hopper Toner Empty Switch |
| | | |
| | Add-on paper Source Unit | |
| PWB-A | ———————— | Cassette Main Board |
| PWB-S | ———————— | Paper Size Detecting Board |
| S1 | ———————— | Cassette Set Switch |
| S2 | ———————— | Side Cover Set Sensor |
| S3 | ———————— | Take-Up Sensor |
| S4 | ———————— | Paper Empty Sensor |
| S5 | ———————— | Paper Near Empty Sensor |
| SL1 | ———————— | Take-Up Solenoid |

| | |
|---|---|
| DWG.NO. | 1167-C101-0A |
| TITLE | CIRCUIT DIAGRAM |
| MODEL | DI180f/DI250f<br>DI180/DI250 |
| VOLTAGE | AC100/115/120/127/<br>200/220/240V |
| EFFECTIVE MACHINE NO. | XX0101 AND ONWARD |
| DATE ISSUED | Dec. 1998 |

# Di250 MAINTENANCE SCHEDULE

This Maintenance Schedule is intended to be used as reference information for establishing effective field service activities. To keep the copiers in as optimum a condition as possible, it is recommended that the maintenance jobs described in this schedule be carried out.

It should be noted, however, that frequency of maintenance jobs determined by the number of copies is simply a guideline. Therefore, service management personnel can revise or amend this schedule by taking into account their own individual field experiences. We feel that this will ensure more effective copier maintenance for your customers.

* This time interval (the number of copies produced) at which each component is cleaned or replaced is determined based on the average service life of the component. More or less frequent cleaning or replacement will be necessary depending on the actual image quality and paper passage performance.

NOTE: All information in this Maintenance Schedule is subject to change without prior notice.

C: Cleaning R: Replacement Unit: 1000 Copies

■ PAPER TAKE-UP/TRANSPORT SECTION

K=1,000 copies

| PM Parts | Maintenance Cycle (K) | | Parts No. | QTY | Reference Page |
|---|---|---|---|---|---|
| | Clean | Replace | | | |
| Paper Take-Up Roll | - | 120 | 1164-3001-01 | 1 | D-10 |
| Paper Dust Remover | 60 | 120 | 1165-0756-01 | 1 | D-10 |
| Side Cover | 60 | - | - | - | D-11 |

■ OPTICAL SECTION

| PM Parts | Maintenance Cycle (K) | | Parts No. | QTY | Reference Page |
|---|---|---|---|---|---|
| | Clean | Replace | | | |
| Mirrors/Lens | 120 | - | - | - | D-16 |
| Scanner Rails/Bushings | 60 | - | - | - | D-15 |
| Original Glass | 60 | - | - | 1 | D-16 |

■ IMAGE TRANSFER SECTION

| PM Parts | Maintenance Cycle (K) | | Parts No. | QTY | Reference Page |
|---|---|---|---|---|---|
| | Clean | Replace | | | |
| Image Transfer Roller | - | 150 | 1164-0335-01 | 1 | D-23 |
| Pre-Image Transfer Guide Plate | 60 | - | - | 1 | D-24 |

■ FUSING SECTION

K=1,000 copies

| PM Parts | Maintenance Cycle (K) | | Parts No. | QTY | Reference Page |
|---|---|---|---|---|---|
| | Clean | Replace | | | |
| Fusing Unit | - | 300 | - | 1 | D-26 |

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